

# Mississippi Department of Environmental Quality



# 2008 Annual Report

## Table of Contents

<b>Letter from the Executive Director.....</b>	<b>3</b>
<b>Commission on Environmental Quality.....</b>	<b>4</b>
<b>MDEQ Mission Statement.....</b>	<b>4</b>
<b>MDEQ Values.....</b>	<b>4</b>
<b>Mississippi Gulf Region Water and Wastewater Plan.....</b>	<b>5</b>
<b>Hurricane Katrina Three Year Report.....</b>	<b>6</b>
<b>Air Quality.....</b>	<b>11</b>
<b>Water Resources.....</b>	<b>15</b>
<b>Office of Geology.....</b>	<b>23</b>
<b>Environmental Permitting.....</b>	<b>28</b>
<b>Compliance and Enforcement.....</b>	<b>30</b>
<b>Clean up of Contamination.....</b>	<b>32</b>
<b>Solid Waste Management.....</b>	<b>35</b>
<b>Pollution Prevention.....</b>	<b>41</b>
<b>State and Federal Grants and Loan Programs.....</b>	<b>43</b>
<b>Outreach .....</b>	<b>44</b>
<b>Awards .....</b>	<b>50</b>
<b>Hurricane Gustav.....</b>	<b>52</b>





**STATE OF MISSISSIPPI**  
HALEY BARBOUR, GOVERNOR  
**MISSISSIPPI DEPARTMENT OF ENVIRONMENTAL QUALITY**  
TRUDY D. FISHER, EXECUTIVE DIRECTOR

January 15, 2009

The Honorable Haley Barbour  
Governor, State of Mississippi  
Post Office Box 139  
Jackson, Mississippi 39205

Dear Governor Barbour:

I hereby submit to you the Mississippi Department of Environmental Quality's report for the state fiscal year ending June 30, 2008, and additional information for calendar year 2008. We will continue to strive to safeguard the health, safety, and welfare of all Mississippians by conserving and improving our environment and fostering wise economic growth through focused research and responsible regulation.

The largest initiative for the agency this year was the continued implementation of the Mississippi Gulf Region Water and Wastewater Plan. During 2008, the majority of the environmental and engineering work was completed on the projects. Land acquisition work has commenced on many of the projects. The Poplarville Water and Tank Project and the City of Moss Point Reverse Osmosis Projects both funded under this program were completed. By the end of 2008, construction bids for approximately \$270 million in work have been received. We look forward to additional projects underway soon to aid the recovery and rebuilding of South Mississippi.

I hope you find this report useful and informative. We appreciate your support and welcome your suggestions and comments.

Sincerely,

A handwritten signature in cursive script, appearing to read "Trudy D. Fisher".

Trudy D. Fisher  
Executive Director  
Mississippi Department of Environmental Quality

Cc: Lieutenant Governor Phil Bryant  
Cc: Members of the Mississippi Legislature

## Mississippi Commission on Environmental Quality

**Chairman:** R. B. (Dick) Flowers - 1st District

**Vice Chairman:** Jack Winstead - 3rd District

Martha Dalrymple - 2nd District

Charles Dunagin - 4th District

Howard McKissack - 5th District

Chat Phillips - At Large

W. J. (Billy) Van Devender - At Large



## Mission Statement

The mission of the Mississippi Department of Environmental Quality is to safeguard the health, safety, and welfare of present and future generations of Mississippians by conserving and improving our environment and fostering wise economic growth through focused research and responsible regulation.

## Values

- Truth is the foundation of everything we do.
- We vigilantly resist bias and prejudice.
- We respond promptly, courteously, and as completely as possible to every complaint question, or request for assistance.
- Inside the agency, we respect the capabilities, responsibilities, and contributions of every member of the MDEQ family. Outside the agency, we respect everyone, regardless of who they are or why we are brought together.
- We strive for a secure, stimulating, rewarding work environment in which all member of the MDEQ family are empowered and encouraged to reach their full potential.
- We are committed to the highest standards of performance in every aspect of our jobs.
- We are accountable, individually and collectively, for effective, efficient management and use of the resources provided to accomplish our mission.



# MISSISSIPPI GULF REGION WATER AND WASTEWATER PLAN

During 2006, the Mississippi Department of Environmental Quality developed the Mississippi Gulf Region Water and Wastewater Plan (Plan) as directed by Governor Barbour in response to Hurricane Katrina. This Plan recommends approximately \$600 million to fund water, wastewater, and storm water projects in Jackson, Harrison, and Hancock Counties, to (1) support existing and future growth patterns, particularly as realized through new housing construction, (2) promote economic development, and (3) emphasize the regional concept for infrastructure management. The funding is provided by the U.S. Department of Housing and Urban Development (HUD) through Disaster Recovery Community Development Block Grant Grants(CDBG).

The Plan was approved by HUD in April, 2007. All monies for funding were made available by HUD for these projects by June, 2007. Grant awards were made to Pearl River County Utility Authority, Stone County Utility Authority, Hancock County Utility Authority, Harrison County Utility Authority, Jackson County Utility Authority, and the Cities of Ocean Springs, Gautier, Moss Point, and Pascagoula to fund these projects.

During 2008, the majority of the environmental and engineering work was completed on the projects. Land acquisition work has commenced on many of the projects.

The Poplarville Water and Tank Project and the City of Moss Point Reverse Osmosis Projects both funded under this program were completed.

A component of each of the projects has been advertised for construction bids. By the end of 2008, construction bids for approximately \$270 million in work have been received. Construction on these projects will begin late 2008 and early 2009.



Moss Point Osmosis Project



Ribbon cutting for Poplarville watertower



## HURRICANE KATRINA YEAR THREE REPORT

In the weeks and months after Hurricane Katrina, the Mississippi Department of Environmental Quality (MDEQ), along with its state and federal partners, worked hard to evaluate environmental conditions along the coast. This monitoring included sampling of the Mississippi Sound, the connected bays and bayous, and the freshwater inflows into the bays. It encompassed air, water, soil, sediment, fish, shrimp, and crabs. The results of multiple monitoring studies indicated very limited chemical contamination as a result of the storm. Since the initial monitoring results were generally very positive, the intensity of the monitoring has been reduced. However, continued monitoring of coastal Mississippi is still very important during the rebuilding process. MDEQ continues to lead this monitoring effort, as the region rebuilds after the storm.



- Safe beaches are a major attraction to the Mississippi Gulf Coast, and MDEQ has an important role in ensuring the safety of the bathing public. As the swimming beaches have been reopened following debris removal, MDEQ with support from the Gulf Coast Research Laboratory and the Beach Monitoring Task Force has re-established the Beach Monitoring Program to advise the public of potential health risks if bacteria concentrations exceed State Water Quality Criteria. The coastal counties have also made improvements to Mississippi's beaches. Beach re-nourishment, planting of vegetation, and improvements to infrastructure have benefited water quality. The counties contracted with the U.S. Army Corps of Engineers to replace sand lost due to storm erosion. This work has required temporary closure of each segment as work progresses; however, the beaches and water quality have recovered quickly once the re-nourishment projects are completed.
- Fresh seafood is important to the economy of the coast, and to the health and quality of life of coastal residents and visitors. MDEQ helps to ensure the safety of this important resource by monitoring for contaminants in the tissues. Over the past two years, MDEQ and the Gulf Coast Research Laboratory have analyzed fish tissue samples from a wide diversity of fish collected from fishing tournaments and rodeos held across the coast, as well as from routine sampling conducted by state agencies. This effort has resulted in the analysis of approximately 75 different species of fish for mercury levels to evaluate potential health risks associated with eating these fish. A report on this work is due out in 2009.
- MDEQ has made great strides in rebuilding and improving air monitoring capabilities along the Mississippi Gulf Coast under the \$897,000 Post Hurricane Katrina Supplemental Air Monitoring Grant award from the U.S. Environmental Protection Agency. More than 80 percent of the air monitoring equipment needs in the Hurricane Katrina grant have been replaced, and sites are being strengthened for future storms. Additionally, satellite radios have been acquired to bolster the agency's ability to communicate and respond during another serious event. This funding will also be used to purchase and install an emergency, back-up generator system for MDEQ's



laboratory. This will allow mission critical laboratory operations to continue despite power outages caused by storms or other disasters.

- Building debris clean-up and reconstruction efforts along the Coast are causing very large numbers of building demolition and renovation operations that pose a concern for asbestos. MDEQ's Asbestos Section continues to be fully engaged with local officials, contractors, and the public so that they may be aware of asbestos control regulations and safety measures to follow. Education and assistance for the requirements of the regulations are a priority, and MDEQ maintains a presence in the area performing compliance assistance and compliance monitoring inspections and other outreach. The No Action Assurances that were negotiated with EPA were implemented through September 2007. The procedures that were set helped expedite the handling of residential property that had to be cleared for rebuilding and assured environmentally safe operations.
- Treatment of municipal wastewater is a vital element in the reconstruction of the Coast and in protection of the environment. MDEQ continues to work with the coastal communities to repair and upgrade their wastewater treatment facilities.
  1. In the City of Waveland, the two phases of water and sewer system replacement south of the railroad are approximately 80 percent complete.
  2. Bay St. Louis is continuing to rebuild the utility infrastructure in the most devastated areas (Phases I-III). This work will replace all water and sewer lines in the area between the railroad tracks and the beach. The Phase I area is approximately 10 percent complete, while Phase II is 40 percent complete. Phase III is waiting on FEMA approval of contract documents, and phase IV, which was



outside the devastated area, is in design. The city's pump stations are operable with temporary repairs, while permanent repairs are being negotiated with FEMA.

3. The City of Long Beach has completed all three phases of sewer line replacement along Beach Boulevard. Three additional phases of line replacement are planned between the beach and the railroad, with one phase ready to bid and two others in design. All temporary service lines south of the railroad have been removed.
4. The City of Biloxi has yet to begin construction on any of their 14 phases of collection system reconstruction. A project manager has been selected, and most of the phases are in the design stage. Mitigation through the relocation of lines and pump stations off the beach has been an issue in slowing these projects, which are expected to take several years to complete. Some diesel generator bypass pumps remain in place at the larger stations where temporary line power is not available.

5. The City of Gulfport has six utility repair/replacement projects south of the railroad tracks. One project is under construction, with a second contract awarded in July.
  6. The Harrison County Utility Authority (HCUA) has recently begun permanent repairs at the Gulfport South and Long Beach/Pass Christian Wastewater Treatment Plants (WWTP). All HCUA treatment plants are fully operational with some temporary measures still in place. The Authority also has four large pump station projects remaining, with three going to bid soon, and the fourth in the design phase.
  7. The Hancock County Utility Authority has completed most repairs with some small items and mitigation projects remaining.
  8. The Jackson County Utility Authority and the municipalities in Jackson County have completed most of their storm related utility projects. The City of Moss Point has awarded a contract to finalize pump station repairs.
- Federal funding for EPA's National Coastal Assessment Program ended in 2006. This water quality monitoring program is crucial to evaluating the quality of Mississippi's coastal waters as communities rebuild and grow following Hurricane Katrina, and implementation of the Governor's Gulf Region Water and Wastewater Plan. MDEQ is partnering with the Gulf Coast Research Laboratory and the Department of Marine Resources to continue this important program.
  - MDEQ has taken an active role in supporting the Gulf of Mexico Alliance and its Governors' Action Plan for Healthy and Resilient Coasts. This plan is aimed at protecting and restoring water quality and habitats in the Gulf of Mexico and its estuaries, and improving public awareness of the Gulf through environmental education. The Alliance is devoted to accomplishing these goals through regional collaboration. Mississippi is the lead state for the Nutrient Reduction Priority Issue Team with the Alliance and is currently in the process of drafting action items that will be included in the next Governors' Action Plan. This plan will have a five-year time frame and will begin in March 2009.
  - MDEQ has reestablished its ambient monitoring program for the state. A component of this program was to restore monitoring at long term historical sites at the major freshwater inflows into coastal waters. This monitoring, which was suspended in 2000 due to resource constraints, will build upon years of historical data to help MDEQ track long term trends in water quality in our coastal streams.
  - The Emergency Response Branch continues to recover hazardous materials containers from woods and marshes in the coastal counties.
  - MDEQ has also been active in strengthening response in the event of another natural disaster or security event.
    1. MDEQ is revising its Response Plan to improve coordination and communication with MEMA, FEMA, sister agencies, and local governments during emergencies.
    2. MDEQ has updated staff to be prepared to respond in a time of disaster. This training includes the National Incident Management System so efforts can be better coordinated with other agencies, and proper documentation of expenditures to



ensure that state funds expended are eligible for reimbursement by FEMA.

3. MDEQ participated in the Hurricane Ulysses Disaster Drill to test preparedness on May 1, 2008.
4. MDEQ has prepared FEMA trailers and equipment to serve as temporary housing and office space for staff when responding to incidents or disasters.

### **Water Pollution Control Revolving Loan Fund**

The Water Pollution Control Revolving Loan Fund (WPCRLF) administered by the Construction Branch within MDEQ's Office of Pollution Control, provides low interest loans to cities, counties, sewer districts, regional wastewater authorities, and other governmental entities for wastewater projects, sludge disposal facilities, storm water pollution control projects, non-point source pollution control projects, and estuary management projects. Over the three years since Hurricane Katrina, MDEQ's Construction Branch staff has worked closely with the existing WPCRLF loan recipients to provide much needed financial relief in the form of loan forbearances to allow time for rebuilding and recovery and return of their sewer customers. Also, legislation passed by the Mississippi State Legislature (SB 3174), provided \$600,000 in state match funding required to secure \$3 million in U.S. Environmental Protection Agency funds available to the WPCRLF Program through Federal Fiscal Year 2009. These and other WPCRLF funds will be made available as low interest loans which can further assist the coastal communities as means of financing needed wastewater infrastructure projects for which grant funding may not be available.

### **Disaster Debris Management**

Hurricane Katrina generated over 46 million cubic yards of storm debris across the State of Mississippi with approximately 24 million cubic yards of that in the three coastal counties. Almost all of this debris has now been removed and either disposed of or recycled. Consequently, much of MDEQ's debris related work in the third year following Katrina has focused on ensuring the proper closure and restoration of the more than 340 debris management sites utilized throughout the state. Various work efforts over the past year by MDEQ's solid waste programs on Hurricane Katrina-related debris issues include the following:

- MDEQ is continuing to coordinate with the Mississippi Emergency Management Agency and local communities throughout the state to inspect and follow up on the remaining unresolved sites used for disaster debris management after Katrina. These follow up efforts have focused on whether the sites have been properly cleaned up, closed, and restored to natural conditions. Only a handful of debris management sites have yet to meet proper closure requirements.
- MDEQ is continuing to monitor the 19 disaster debris disposal sites in the three coastal counties used for the management of the massive amount of structural and building debris created by the hurricane. Thirteen of these sites were temporary emergency debris disposal sites created strictly to handle disposal of the disaster debris. The remaining six sites were sites that were permitted and operating at the time Hurricane Katrina hit the coast but that accepted much larger quantities than normal of the mixed disaster debris removed from coastal communities. MDEQ is conducting inspections of the emergency debris disposal sites to determine post closure conditions, requiring engineering certification of the closure actions, and conducting post-closure groundwater sampling and monitoring around the 19 sites to ensure that impacts to groundwater from the buried debris is not occurring.
- MDEQ has provided grant support this past year totaling over \$170,000 through the Mississippi Local Governments Solid Waste Assistance Grants program to Hancock, Harrison, and Jackson Counties and to the

City of Gautier. These grants will help provide local household hazardous waste collection, employ local solid waste enforcement officers, and fund recycling projects.

- MDEQ, with support from EPA, has also provided supplemental grant support of another \$95,000 to the three coastal counties to support the household hazardous waste collection programs along the Gulf Coast. This additional grant support was needed to help these counties handle the increased amount of household hazardous waste being generated in these counties as the result of increased construction, renovation and rebuilding activities.
- MDEQ, with support from the federal government, is continuing work with an engineering firm on an initiative to develop a long range plan addressing solid waste needs in counties of George, Hancock, Harrison, Jackson, Pearl River and Stone. This initiative will help the counties address solid waste needs created by the impact of debris disposal from Hurricane Katrina but will also help the counties plan for the management of debris for future disaster events. This planning initiative is expected to be completed by June of 2009.
- MDEQ, in addition to the long range initiative, has worked with county governments over the past year in Hancock, Harrison, Jackson and Pearl River Counties on solid waste planning efforts to address and provide needed new disposal capacity in each of those counties.



# AIR QUALITY

## Air Quality Standards and Planning

Mississippi has historically attained all federal ambient air quality standards. However, new, more stringent federal standards for ground-level ozone, fine particulate matter, and visibility recently promulgated by the U.S. Environmental Protection Agency (EPA) are jeopardizing this track record. Increased planning and monitoring efforts will continue for several years because of these changes.

Emissions reductions in Mississippi and adjoining states, as well as favorable meteorological conditions, have resulted in a recent downward trend in ozone concentrations culminating with all Mississippi counties being designated by EPA as attainment with the ozone standard of 84 parts per billion (ppb) in 2004. However, EPA has issued a new ozone standard of 75 ppb, effective in March 2010. This may result in the Mississippi Gulf Coast counties and DeSoto County being designated as nonattainment with the new standard.

Harrison and Jackson Counties are currently showing data that would exceed the new ozone standard of 75 ppb. MDEQ is continuing a voluntary ozone precursor air pollution control program in partnership with governmental and business leaders on the Coast in efforts to prevent or mitigate future nonattainment.

DeSoto County is also showing data that would exceed the new ozone standard. Therefore, MDEQ is continuing a voluntary ozone precursor air pollution control program in partnership with governmental and business leaders in DeSoto County. MDEQ is also working with local governments to develop an anti-idling policy for county vehicles.



EPA has designated all Mississippi counties as attaining the annual and 24-hour fine particulate matter standards.

MDEQ issues daily air quality forecasts for the Mississippi Gulf Coast from April through October each year. Also, MDEQ, in association with the Memphis-Shelby County Health Department, issues air quality forecasts for DeSoto County. These forecasts are made available through e-mail as well as the MDEQ web site. The purposes of these forecasts are to keep the public informed about the status of air quality, to issue health advisories when needed,

and to notify the members of the respective ozone precursor reduction programs when they should implement their emissions reduction plans.

## Regional Haze Rule

In 1999, EPA promulgated the Regional Haze Rule (RHR) to improve visibility in designated national parks, wildlife refuges and wilderness areas referred to as Class 1 areas. While there are no Class 1 areas in Mississippi, there are three in surrounding states that emissions sources in Mississippi could impact. They are the Breton Wildlife Refuge in Louisiana, which includes the Chandeleur Islands, the Sipsey Wilderness Area in North Alabama, and Caney Creek Wilderness Area in Arkansas.

Mississippi and nine other Southeastern states have been working together in a collaborative effort since 2001 to determine the sources and potential solutions to improve visibility in these areas. This effort required the development of new modeling and analytical techniques that in addition to addressing visibility will be beneficial to future air quality planning efforts. In 2008, the State Implementation Plan (SIPs) was finalized. Mississippi submitted the final SIP to address Regional Haze in September of 2008. The rule requires the states to review and submit progress reports every five years and submit a SIP every ten years to further address visibility and bring the areas to what is considered “natural background” conditions by 2064.

### Mississippi School Bus Retrofit Project

In 2008, MDEQ Air Division received a grant from EPA to reduce diesel emissions in Mississippi. This grant along with matching funds was used to create the Mississippi School Bus Retrofit Project. Beginning in 2009, MDEQ will utilize approximately \$500,000 dollars to retrofit over 300 school buses in Mississippi with diesel oxidation catalysts. The diesel oxidation catalysts will provide significant reduction in fine particulate and hydrocarbon emissions from the retrofitted buses. This will improve the air quality in general by lowering concentrations of these pollutants in the ambient air. There will be a particularly beneficial impact to the school children that ride the buses everyday. The participating school districts were selected in collaboration with the Mississippi Department of Education and the American Lung Association of Mississippi. In conjunction with this program, we have been working with the Department of Education to reduce the amount of time that school buses unnecessarily idle which will further reduce exhaust emissions.

### Air Monitoring

During FY2008, MDEQ operated a network of sophisticated continuous air analyzers and 24-hour samplers for the purpose of measuring ambient air levels of ozone, particulate matter, sulfur dioxide, carbon monoxide, and nitrogen oxides.



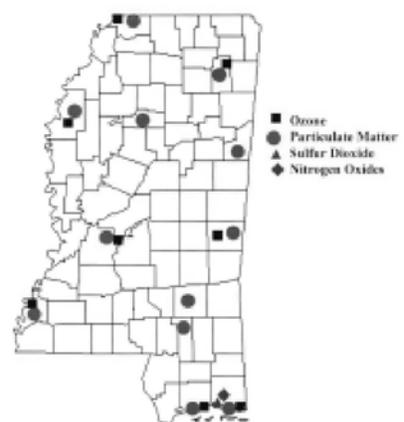
This monitoring network serves many purposes including:

- Determine attainment and nonattainment areas for ground-level ozone and particulate matter.
- Generate data to assist in determining methods to reduce visibility obscuration.
- Support ozone reduction programs.
- Determine general air quality trends.

### Asbestos

The possibility of asbestos pollution is an important consideration in most building demolitions and renovations due to the presence of asbestos in many building products and materials. The Department’s Asbestos Section therefore operates to ensure proper work practices by providing guidance and assistance for the requirements of regulations, visiting sites to ensure that safe and regulation compliant procedures are being performed, and by responding with an immediate investigation of any complaint. The Department also operates to ensure that individuals who perform asbestos abatement work are properly trained through an asbestos abatement personnel certification program. Additionally, MDEQ works to ensure asbestos-safe conditions in schools by reviewing asbestos management plans that are

2008 Mississippi Ambient Air Quality Monitoring Sites



required of schools, and by performing school inspections to verify compliance with the regulations.

During 2008, MDEQ inspected 408 regulated demolition and renovation operations and investigated 53 complaints. The training and other qualifications of certification applicants were reviewed and 1,517 certificates were issued to individuals for the performance of asbestos abatement activity. Also, asbestos management plans were reviewed and building inspections were performed in 36 school locations across the state.

There are many other hazardous air pollutant (HAP) sources regulated due to air emissions of chemicals and compounds they may cause acute or chronic health conditions, including increased risk for cancer. Industrial facilities, and many small businesses across the state, must reduce HAP emissions under standards known as maximum available control technology (MACT) standards. These standards often require facilities to install additional control equipment, change process equipment, or change the materials being used in a process. There are 174 major source category standards and 70 such standards applying to smaller HAP emission facilities, identified as area sources. The MDEQ implements these regulations to approximately 200 major sources and thousands of area sources in Mississippi.

Another important area of regulation concerns facilities that may use, or have in storage, certain chemical compounds that would pose imminent danger in the event of a chemical accident, or uncontrolled release. These facilities must have an active risk management program and must submit a risk management plan (RMP) for MDEQ review. There are 173 facilities subject to the RMP regulations, 21 of these facilities were reviewed and evaluated for regulation compliance during FY 2008.

## **Title V Program**

Mississippi received full approval from EPA in January 1995 to administer the Title V Air Operating Permit program. This program originated in the amendments to the Clean Air Act enacted in 1990. Each major source of air pollution is required to obtain a Title V Operating Permit which sets out all air requirements applicable to the source and specifies the methods by which the source must demonstrate compliance. All aspects of Title V permitting are handled by the Environmental Permits Division, while all compliance certifications and demonstrations are handled by the Environmental Compliance and Enforcement Division.

The Air Division evaluates the annual revenue needed to conduct an adequate Title V program. The revenue needs are reported to the Commission on Environmental Quality so that the appropriate fee rate (\$/ton) can be adopted prior to the September 1 annual fee payment date. The Air Division also handles the collection of emissions information from fee-subject sources and provides this fee-assessment information to the MDEQ Office of Administrative Services which handles fee billing and collection.

## **Lead-Based Paint Program**

The Lead-Based Paint Program's scope establishes procedures and requirements for the accreditation of lead-based paint activities training programs, procedures and requirements for certification of inspectors, risk assessors, project designers, supervisors, workers and firms engaged in lead-based paint activities and work practice standards for performing such activities. These regulations are applicable to all persons engaged in lead-based paint abatement activities in target housing and child-occupied facilities.

The problem with Lead-Based Paint:

- Lead is a heavy metal which is believed to have been a serious public health problem for centuries. This problem is especially serious for the children that are six years of age and under. This problem is also serious for the developing fetus.

- Lead from paint, dust and soil can be dangerous if not managed properly.
- Even children that seem healthy can have high levels of lead in their bodies.
- People can get lead in their bodies by breathing or swallowing lead dust, or by eating soil or paint chips with lead in them.

**Certification:**

No person may engage in lead-based activities unless they hold a valid certificate from the Commission on Environmental Quality. No firm shall employ any person on lead-based paint activity who does not possess a current certificate issued by the Commission.

During FY2008, MDEQ Lead-Based Paint Section performed 13 inspections and certified 143 individuals and firms involved in lead-based paint activities.

Another important step in the goal to eliminate childhood lead poisoning by 2010 was taken with the publishing of EPA’s Renovation, Repair, and Painting final rule in the Tuesday, April 22, 2008, publication of the Federal Register (Vol. 73, No.78). The rule addresses lead-based paint hazards created by renovation, repair, and painting activities that disturb lead-based paint in target housing and child-occupied facilities. The rule establishes requirements for training renovators, other renovation workers, and dust sampling technicians; for certifying renovators, dust sampling technicians and renovation firms; for accrediting providers of renovation and dust sampling technician training; for renovation work practices; and for record keeping. The rule also includes requirements for a pre-renovation education program. This rule also includes provisions to allow states to seek delegation of this federal program. If the state does not obtain delegation, then a federal program will be implemented in the state on April 22, 2009. MDEQ is currently working on seeking delegation of the renovation rule.



Gwen Braddy sharing information about lead poisoning.



Lead-based paint inspection and removal.

# WATER RESOURCES

## Total Maximum Daily Loads

Total Maximum Daily Loads (TMDLs) are a requirement of the Federal Clean Water Act passed in the early 1970's to provide direction for restoring the nation's waters. TMDL reports provide an analysis of the ability of a water body to assimilate pollutants from point sources, such as industry and communities, and nonpoint sources, such as storm water runoff from urban areas or agriculture.

The Clean Water Act requires TMDLs for every impaired water body in the state. Every two years MDEQ creates a list of these impaired waters called the Section 303(d) List of Impaired Waters. EPA approved MDEQ's 2008 Section 303(d) List on July 24, 2008.

A federal consent decree requires EPA to complete the 2,700 TMDLs shown on the 1996 Section 303(d) Impaired Waters List by 2009. MDEQ is taking the lead in addressing these TMDL requirements. MDEQ has sampled the biological community in over 1,000 streams since 2001 to provide an indicator of long term water body health. By utilizing the biological sampling effort and completion of TMDL reports (364 in SFY 2008, 1,231 in total), MDEQ has addressed approximately 2,615 of the TMDLs on the 1996 list. Less than 85 TMDLs are remaining from the consent decree requirements.

MDEQ continues identifying the stressors that are causing biological impairment prior to completing the TMDLs. MDEQ completed 37 stressor identification reports in the Pearl River and the South Independent Streams Basins in 2008.

MDEQ completed the consent decree requirements in the Big Black River Basin, the Coastal Streams Basin, the Tombigbee River Basin, the Pascagoula River Basin, the North Independent Streams Basin, the Tennessee River Basin, and the Yazoo River Basin. MDEQ also worked on TMDLs in the Pearl River and South Independent Streams Basins in 2008.

As the consent decree requirements are being completed MDEQ is transitioning to managing the TMDL Program to coordinate with other surface water programs. The TMDL Program will focus not only on the development of accurate and meaningful TMDLs, but also on the implementation of TMDLs to produce measured improvements in water quality throughout the State.



## **Wetlands**

The goal at MDEQ is to prevent a new loss of wetlands in Mississippi. To meet this goal, MDEQ reviews projects that would impact wetlands or streams to insure that efforts have been made to avoid or minimize impacts. Mitigation of unavoidable impacts may be required in this process.

During FY 2008, MDEQ reviewed 121 applications for Water Quality Certification. It is important to note that each year a large number of projects are covered under Nationwide or General Permits and do not require an individual certification.

In order to facilitate the permitting process, MDEQ strongly recommends pre-application meetings, particularly for large or complex projects involving the wetlands issues and the associated water quality implications.



## **Storm Water Regulations**

Implementation of Mississippi's Storm Water General Permits and regulations continues in FY2008.

The Environmental Permits Division (EPD) issued permit coverage for 368 large construction projects (5 acres or greater). In addition, the Small Construction General Permit (1 acre to less than 5 acres) was reissued on January 3, 2008.

EPD issued general permit coverages and recoverages for 82 regulated industrial facilities. In addition, EPD received 47 "No Exposure Certifications" from potentially regulated industrial facilities. Facilities that certify "no exposure" of industrial activity to storm water are not required to obtain permit coverage. The Mining Storm Water General Permit was issued October 1, 2007. The recorage process immediately began for approximately 900 mining facilities and continued into 2008. Approximately 304 mining coverages and recoverages were issued in 2008. EPD is working on permit reissuance of the Ready-Mix General Permit for another 5-year period and has been in contact with the regulated community, the MS Concrete Industries Association and MDEQ's P2 Committee for peer review.

Storm Water Management Program implementation for Mississippi's Phase II MS4s (consisting of 24 cities, nine counties, two military bases, one university and MDOT) continues into the fifth year of a five-year implementation schedule. EPD went to Public Notice with the second generation general permit at the end of 2008.

MDEQ continues to follow the federal storm water regulations as they apply to oil and gas-related construction activities. Construction activities associated with oil and gas exploration, production, processing and treatment, and transmission facilities that are defined in the following North American Industrial Classification System (NAICS) codes and titles: 211-Oil and Gas Extraction, 213111-Drilling Oil and Gas Wells, 213112-Support Activities for Oil and Gas Operations, 48611-Pipeline Transportation of Crude Oil and 48621-Pipeline Transportation of Natural Gas, are generally exempt from State NPDES construction requirements. However, MDEQ strongly encourages voluntary application of construction best management practices in order to minimize the discharge of pollutants in storm water runoff.

EPD worked with several consulting groups and MDEQ's Non-Point Source Education group in developing training for municipalities and contractors in storm water sediment and erosion control and management.

## The National Rivers And Streams Assessment (NRSA) Lower Mississippi River Project

Biologists with the MDEQ Field Services Division were recipients of EPA funding to participate in a special project that was a portion of the National Rivers and Streams Assessment. This project was a collaborative effort between EPA, MDEQ and several other state and federal agencies that focused on the portion of the Mississippi River that runs from Cairo, Illinois, to the mouth below New Orleans. These sites for which MDEQ were responsible were located on that portion of the river from north of Vicksburg to that point where the river enters Louisiana.

This intensive sampling effort examined multiple biological communities, numerous physical and chemical parameters of both water and sediment, and a rigorous habitat characterization. The project is coordinated by the EPA Office of Research and Development in Duluth, Minnesota. Training was provided by the EPA during May, 2008. Sampling of the Mississippi River began in August and continued through September, 2008.



The collected samples have been shipped to EPA contractors for analysis. Results are expected to be returned to the various sampling teams by early 2009. When this project is complete and the results analyzed, the resulting dataset will encompass the Mississippi River from its source in Minnesota all the way to the Gulf of Mexico. As MDEQ continues to examine the hypoxia in the Gulf of Mexico, these data may provide valuable insights.



## Coastal Beach Monitoring Network

MDEQ's Coastal Beach Monitoring Program, operated in conjunction with the University of Southern Mississippi's Gulf Coast Research Laboratory (GCRL), conducts routine bacteria and water chemistry sampling at 22 beach stations located along Mississippi's Gulf Coast. MDEQ is a partner within a multi-agency Beach Monitoring Task Force composed of the EPA Gulf of Mexico Program, Mississippi Department of Marine Resources, GCRL, and the Mississippi Department of Health. This Beach Monitoring Task Force oversees the program and issues beach advisories when needed. MDEQ and the Beach Monitoring Task Force rely on data collected under this program to assess health and safety issues for users of Mississippi's recreational beaches. When *Enterococcus* bacteria concentrations reach unsafe levels, beach advisories are issued. In addition, the monitoring data provide information concerning the seasonal water quality conditions of the immediately accessible waters along the public bathing beaches. Beach water quality conditions are made available to the public via a Beach Monitoring webpage developed by GCRL that can be accessed on the MDEQ homepage.



Hurricane Gustav Impacts Beaches at Bay St. Louis

During 2008, Hurricane Gustav caused high winds and tides along the Mississippi Coast. Debris deposited in the waters of several beaches made them unsafe for swimmers. As a result of this hurricane, MDEQ issued beach advisories for safety purposes unrelated to water quality.

The U.S. Army Corps of Engineers funded and contracted to provide important re-nourishment of beach sands at many of the Mississippi Beaches during the 2008 recreational season. However, for safety purposes during the re-nourishment activities, MDEQ issued advisories to protect swimmers from using the beaches near the construction sites. These beaches were closed during the construction activities.

### **Recalibration of Mississippi's Benthic Index of Stream Quality (M-BISQ)**

In 2000, MDEQ began to develop a biological assessment tool for wadeable streams and rivers in Mississippi. A statewide biological monitoring project was implemented with two main objectives: to obtain monitoring data from §303(d) listed wadeable streams and rivers and to assess these data using an Index of Biological Integrity (IBI). With input from state and federal biological experts, MDEQ re-designed its biological monitoring program, incorporating the IBI to produce high quality, scientifically defensible data. This new monitoring program included the adoption of new biological field and laboratory methods, and a new index period (December - February) was selected for benthic sampling. Rigorous protocols were also employed including development of a comprehensive Quality Assurance Project Plan with detailed standard operating procedures, revisions to data entry and biological database management procedures, and documentation of data quality characteristics throughout the entire data collection and assessment process.

To date MDEQ has completed eight phases of M-BISQ monitoring for a total 1040 monitored sites. The eighth phase was used to recalibrate the M-BISQ tool. Recalibration is required every 5 years. The ninth phase is comprised of 99 sites that will be used to further refine the tool. Results from the M-BISQ effort are being used to assess the status of §303(d) listed water bodies and to steer future biological monitoring and assessment activities for wadeable streams and rivers. Much of the basis for Mississippi's §305(b) water quality assessment is from data collected and analyzed from all phases of the M-BISQ monitoring project.

### **Bacteria Monitoring and Assessment**

Beginning in the summer of 2007, MDEQ implemented a new monitoring program that collects bacteria samples at approximately 42 sites on flowing waters statewide. These sites were selected for monitoring because the waters are designated as primary contact recreational waters in Mississippi's Water Quality Standards. Waters are designated for recreational use where the public enjoy water sports such as swimming and skiing. Specific water quality sampling methods, field data collection activities and laboratory analyses are described in the *Mississippi Department of Environmental Quality Quality Assurance Project Plan for the §106 Monitoring Network in the State Surface Water Monitoring and Assessment Program* (MDEQ 2007). This QAPP was used to ensure that the data collected, compiled and/or generated for these projects were complete, accurate, and of the type, quantity, and quality required for its use.



Bacteria Monitoring Sites

### **Coastal Monitoring**

MDEQ has participated in the EPA National Coast Assessment Program from its inception in 2000 thru 2006. Although EPA suspended funding for the NCA program, MDEQ has partnered with the Gulf Coast Research Lab and the Mississippi Department of Marine Resources to continue a very similar sampling program, termed the Mississippi Coastal Assessment Program. This monitoring is important to help evaluate coastal water quality conditions after Hurricane Katrina and during the rebuilding efforts. Coastal assessment monitoring is conducted during the late summer index period (July-September). Sample sites are selected using a probabilistic site selection meth-

odology. At the end of a five year cycle, a total of 125 sites will be sampled for the coastal monitoring program.

### **Ambient Fixed Station Monitoring**

In 2008, MDEQ continued sampling 30 sites on a monthly basis. These 30 sites are a subset of the historical Statewide Fixed Monitoring Network. This will allow MDEQ to maintain this long term project of recording to help evaluate trends in water quality. The primary indicator is water chemistry including toxics, which will be sampled quarterly.



### **2006 Triennial Review Approved by EPA**

EPA approved the revised *Mississippi Water Quality Criteria, for Intrastate, Interstate, and Coastal Waters* on June 25, 2008. In 2007, MDEQ completed the 2006 triennial review of the state's water quality standards. The Mississippi Commission on Environmental Quality adopted the revised *Mississippi Water Quality Criteria, for Intrastate, Interstate, and Coastal Waters* on August 23, 2007. The letter of certification from the Mississippi Attorney General was received November 28, 2007, and MDEQ submitted the newly adopted standards along with supporting documentation to EPA Region 4 in December 2007.

### **Escatawpa River Site Specific Dissolved Oxygen Criteria Development**

In 2007, EPA Region 4 performed additional modeling applications to study the chronic effects of the proposed dissolved oxygen criterion. In 2008, MDEQ and EPA Region 4 continued to study the Escatawpa River dissolved oxygen data and modeling results in order to determine the appropriate site specific dissolved oxygen criterion for the Escatawpa River. The revised criterion will be based on the natural background levels of dissolved oxygen in the water body. MDEQ plans to propose the modified site specific criterion for dissolved oxygen in the Escatawpa River during the first quarter of 2009.

### **Antidegradation Implementation Methodology**

In 2007, MDEQ's Water Quality Standards Section revised the antidegradation implementation methodology and made receiving EPA's approval of the methodology one of the Water Quality Standards Section's highest priorities. In 2008, MDEQ continued to refine the methodology in a collaborative effort with EPA Region 4 staff. MDEQ began implementing the new procedures in the third quarter of 2008. MDEQ plans to propose the modified antidegradation implementation methodology during the first quarter of 2009.

### **Ambient Lake Monitoring**

Starting in 2009, MDEQ will collect samples from approximately 20 public lakes (greater than 100 acres in size) annually randomly. Lakes will be monitored for traditional physical, chemical, and biological water quality.

### **Nutrient Criteria Development – Estuaries and Coastal Waters**

In 2008, MDEQ continued to work towards developing scientifically defensible nutrient criteria for waters of the State of Mississippi. Mississippi's Nutrient Criteria Development Plan was revised in July 2007, and EPA Region 4 issued a letter of mutual agreement for this plan. The revised criteria development plan states that nutrient criteria will be developed for each of the various water body types in the state. The criteria for each water body type will be coordinated with other water body types to ensure consistency across the state. Mississippi's Nutrient Criteria Development Plan separates criteria development based on various water body types within the state, including:

- Lakes and Reservoirs,
- Wadeable Streams (outside the MS Delta Region),
- Non-Wadeable Streams (outside the MS Delta Region);
- Delta Region Water bodies; and,
- Estuaries and Coastal Waters.

## Assessment and Study of Water Resources

While Mississippi is blessed with an abundant supply of surface water and groundwater resources, certain areas of the state have experienced changes in water-use trends that are often reflected by notable groundwater level declines. Such conditions are indications that the long-term viability of our valuable water supplies demands wise stewardship of the resources and development and implementation of long-range management strategies.



After completing a detailed investigation of the available water resources in Northeast Mississippi, MDEQ's Office of Land and Water Resources (OLWR) has focused its recent attention on four regions of the state recognized as areas of significant population growth, centers of notable groundwater pumpage, or areas without clearly defined hydrogeology. These designated study areas include the following: (1) the Memphis (Sparta) aquifer area including DeSoto and Marshall Counties as well as the counties southward along the Bluff Hills; (2) the Delta region; (3) the Jackson Metro area including the counties of Hinds, Madison, Rankin and Yazoo; and (4) the counties comprising roughly the southern one-third of the state that are underlain by the Miocene aquifer system.

During 2008, staff continued to investigate mechanisms of recharge to the Mississippi River Valley alluvial aquifer in the Delta. In the Jackson Metro area, water level data was collected from water wells and incorporated into the database. In southern Mississippi, water level and water quality data was collected from wells along the coast and work continued across the southern third of the state to better define the character and extent of sands in the subsurface that are sources of groundwater in that area.

Efforts continued this year as MDEQ's Office of Geology and OLWR coordinated activities to map the surficial geology of the state and construct corresponding geologic cross-sections of designated study areas. The objectives of this effort are to refine the delineation and mapping of available aquifers in the state and to identify and protect their corresponding recharge areas from contamination events. Providing safe reliable sources of groundwater is paramount to the maintenance of acceptable public health and to the pursuit of economic development.

## Water Resource Issues in the Mississippi Delta

The economy of the Delta is dependent to a large extent on the availability of suitable water supplies from an estimated 16,000 large-capacity irrigation and aquaculture wells used throughout the region. Most of the water used for these beneficial purposes in the Delta is obtained from the shallow Mississippi River Valley alluvial aquifer (MRVA). With an average withdrawal of approximately 1.5 billion gallons of groundwater pumped per day, the pumpage demand has exceeded the recharge to the MRVA resulting in notable water-level declines in the aquifer. The impacts are much more pronounced in the central portion of the Delta, but the trends indicate that a Delta-wide initiative to conserve water and to balance water use between surface water and groundwater is needed to stabilize the trend. Progress continues to be made on water conservation efforts that began a few years ago, to the point that today, it is widespread throughout the region. To help alleviate extremely low flows in the upper reaches of the Sunflower River, the Yazoo-Mississippi Delta Joint Water Management District maintains a low-flow augmentation project on this stream during dry times of the year. The OLWR continued its efforts to determine the saturated thickness of the MRVA in the central portion of the Delta by drilling stratigraphic holes near MRVA wells that are included in a water-level measuring program that is conducted on a semi-annual basis.

## Source Water Assessment/Protection Program

MDEQ sustained efforts to work with the 1,300 plus public water systems operating in the state and the Mississippi State Department of Health (MSDH) to provide safe sources of drinking water. The first phase of this effort involves performing assessments of the relative susceptibility of public water systems to contamination and assisting in the proper siting of new wells. The final phase includes the development and implementation of Source Water Protection plans that are designed to enhance the protection of drinking water supplies by addressing potential contaminant sources in designated areas around public water supply wells and surface water intakes. Program staff is also assisting the water systems and the MSDH with implementation of EPA's new Groundwater Rule.

## Agricultural Chemical Groundwater Monitoring Program

The Mississippi AgChem Monitoring Program is an on-going program initiated in March 1989, for the purpose of determining if the use of agricultural chemicals is adversely impacting groundwater quality in Mississippi. Sampling initially was conducted on shallow drinking water wells located in the areas of highest pesticide usage before expanding into other regions of the state. Later, program sampling was increased to include other types of wells such as high-capacity irrigation and fish culture wells in the Mississippi Delta.

Through December 31, 2008, a total of 1,459 wells have been sampled in this program with all 82 counties of the state being represented. Of this total, 697 have been drinking water wells and 705 are high-capacity irrigation and fish culture wells located in the Delta. Based on results to date of these sampling activities, there is no evidence that agricultural chemicals are significantly impacting the quality of groundwater in Mississippi.

## Dam Safety

The Commission on Environmental Quality adopted amended Dam Safety Regulations in 2004, requiring owners of High Hazard dams (dams that have the potential to cause loss of life or major property damage in the event of a failure) to have their dams inspected by a registered professional engineer and to develop an Emergency Action Plan (EAP) that would be implemented in the event of an impending failure of the dam. As a result of these engineering inspections and evaluations, the number of High Hazard dams in the state inventory currently stands at 273, an increase of 11 since 2007. Thirty-one dams have been inspected during 2008. The information produced by these inspections has also resulted in dam owners beginning repairs or rehabilitation on 20 dams. This information has also resulted in reservoir level restrictions which required water levels to be lowered behind five High Hazard dams until repairs can be made. Shifting responsibility for inspections to the owners of dams has permitted staff to devote more time to review designs for new High Hazard and Significant Hazard dams and to inspect new dams during critical stages of construction. In 2008, nine High Hazard dams and four Significant Hazard dams were authorized for construction and 10 Low Hazard dams approved for construction. Breach analyses and inundation maps have been completed for all 20 state-owned High Hazard dams.



Approximately 90 percent of the private owners of High Hazard dams are in various stages of complying with the requirement for the inspection and the development of an EAP for their dams. There are now 77 EAPs approved and on file. The approval process includes review and approval at the county level by the local Emergency Management Agency and all first responders that would be required to implement the plan. This procedure has extended the anticipated schedule for completing the documents, but the involvement of local agencies in the plan development greatly enhances the value of the plans in safeguarding lives and property in the event of a dam failure. The Dam Safety Division worked closely with the Pearl River Valley Water Supply District to assist them in preparing an EAP for the Ross Barnett Reservoir.

The Dam Safety Division staff is continuing to work with dam owners in establishing acceptable schedules for compliance with the regulation provided the dams are structurally sound and well maintained. It is anticipated that additional owners may be required to lower the water levels in their lakes and maintain the lower levels until they comply with the regulation.

The Dam Safety Division has completed an emergency response and emergency communications plan for responding to individual dam emergencies as well as a mass dam emergency where several dams are impacted at the same time. Staff members have responded to several dam emergencies and were able to successfully handle each emergency and prevent damage to downstream properties. The Dam Safety Division also assessed the condition of dams in the southern part of the state after Hurricane Gustav impacted the state.

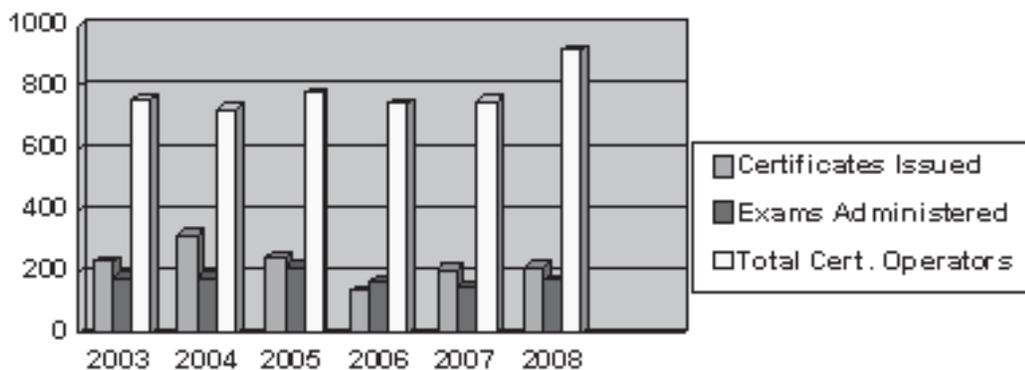


### Wastewater Operator Training

The Operator Training program began in 1969 to provide instruction and technical assistance to municipal and domestic wastewater personnel and facilities. The training, provided at no cost to the operator, was initially associated with a voluntary certification program offered by the Mississippi Water and Pollution Control Operator's Association. Administration of the certification program was transferred to the agency in 1987 when the Legislature mandated certification of all municipal and domestic wastewater operators. The certification regulations include a requirement for continuing education during each three year certification period.

The 2008 training calendar included 39 days of MDEQ sponsored training classes. MDEQ continued its relationship with the three wastewater related associations in the state (Mississippi Water and Pollution Control Operator's Association, Mississippi Water Environment Association and Mississippi Rural Water Association) by cosponsoring and participating in 24 days of training activities. Attendance at MDEQ sponsored sessions totaled 851 operators, utility managers and engineers. Certification exams were administered to 170 prospective operators with 47 new and 171 renewal certificates issued. There are currently 915 certified pollution control operators in the state.

The training staff also provides on-site technical assistance to small municipal systems through the EPA 104(g) grant program. This assistance program is aimed at providing small communities with no cost assistance in returning to or maintaining compliance with their wastewater permit. In 2008, the staff conducted 34 compliance assistance facility visits and 40 outreach visits.



## OFFICE OF GEOLOGY

### Surface Mining and Reclamation of Surface-Mined Lands

MDEQ continued to regulate all non-coal surface mines in the state as provided for in the Mississippi Surface Mining and Reclamation Act of 1977. This includes: (1) issuing surface mining permits and notices of exempt operations, (2) inspecting permitted areas and inspecting complaints, (3) overseeing the reclamation done by operators, and (4) enforcing the law as per the promulgated Rules and Regulations and Commission orders. Coal and lignite mines are regulated under the Mississippi Surface Coal Mining and Reclamation Law of 1979, with oversight of the program by the federal Office of Surface Mining.

During FY2008, some 871 inspections were performed, 40 permits were issued, and 68 Notices of Exempt Operations (operations less than 4 acres in size) were issued. A total of 1,396 exempts are on file, covering approximately 5,500 acres, and 1,443 acres were completely reclaimed as a result of the Mining and Reclamation Division's efforts to oversee reclamation. The state currently has 759 permits covering almost 33,000 acres.

The Mining and Reclamation Division continued to update the mining database to provide data to the MDEM program. This database provides valuable mining information in a GIS format so that mining sites can be located and viewed by anyone on the internet. More work will be done during the coming fiscal year to add new data to the database.

The Mining and Reclamation Division continued to provide the required Mine Safety and Health Administration (MSHA) training for mining operations in the state. MSHA regulations require an 8-hour refresher training course be taught to all mine workers. In FY2008, division staff provided training to 600 miners and 176 contractors working in the mining industry.

Mississippi joined the ranks of the coal-producing states in 2002. The Coal Mining Division was established during FY2007 to focus on the complexities of coal mine regulation. The Mississippi Lignite Mining Company is mining lignite, a low-grade coal, at their Choctaw County mine to supply fuel for an adjacent 440 MW mine-mouth power plant. The mine produces over 3.5 million tons of lignite per year and has permitted 5,904 acres. This permit was initially issued in 1997 and was renewed in February 2008, for its third five-year term. The planned life of the permit is thirty years.

Staff are preparing for the possibility of an application for Mississippi's second lignite mine, which would be in Kemper and Lauderdale counties. This mine is tentatively planned to cover approximately 30,800 acres for a forty-year life. The planned, first-of-its-kind, adjacent power plant would produce 550 MW of electricity and would be fueled by gas produced on-site from the lignite. Environmental and archeological data gathering is under way in preparation for the mining permit application submittal. An Environmental Impact Statement is in preparation by the U. S. Department of Energy and the Corps of Engineers, and will use much of the information collected for the mining permit.



Figure 000. Group picture of RPG field-trip participants on and in front of a haul truck at the Red Hills Lignite Mine. Picture (color negative 597-23) taken on October 7, 2006.

Mississippi's Abandoned Mine Land Plan was approved by the federal Office of Surface Mining in September 2007, with the initial biennial grant approved in October 2007. Work under this new program will cover identification, location, and any necessary reclamation of abandoned historic coal mines in Mississippi. At least eight small surface and underground mine sites are known from publications of the Office of Geology or its predecessors. All of these known sites are believed to have been active sometime in the period from the mid-late 1800s to the late 1920s. They are spread around the state in Lauderdale, Holmes, Choctaw, Winston, Tallahatchie, and Carroll Counties. All parts of the state will be included in the search for abandoned historic coal mines.

### Geological Data Collection Activities

The Department's geologic mapping program for FY2008 was funded in part by a federal STATEMAP 2007 grant of \$116,160 and an NCRDS grant of \$13,000. Deliverables for the STATEMAP grant included the Denham, Buckatunna, and Knobtown quadrangles in Wayne and Greene counties in southeastern Mississippi and the Ruth Quadrangle in Lincoln County in south-central Mississippi. These maps were published in color at a scale of 1:24,000 as Open File reports OF 219-222. FY2009 proposed work for federal STATEMAP 2008 grant was awarded funding of \$87,217 and an NCRDS grant of \$13,000. This work included the Browning, North Carrollton, Gravel Hill, and Coila quadrangles in Leflore and Carroll Counties in west-central Mississippi and Moselle, Ellisville, Eastabuchie, and Barrontown quadrangles in southeastern Mississippi. The 2008 STATEMAP deliverables are due at the end of April 2009. Geologic units mapped in north-central Mississippi in FY2008 and 2009 included the Tusahoma, Hatchetigbee, Tallahatta, Winona, and Kosciusko formations of Eocene age and Holocene alluvium. Geologic units mapped in southern Mississippi in FY2008 and 2009 included the Vicksburg Group of Early Oligocene age, the Chickasawhay Limestone and Paynes Hammock Formation of Late Oligocene age, the Catahoula and Hattiesburg formations of Miocene age, and Holocene alluvium.

Nine test holes were drilled in FY2008, including the #1 Beaver Pond 66 in Kemper County drilled to a total depth of 510 feet, the #1 Ruth in Lincoln County to 300 feet, the #2 Ruth in Lincoln County to 330 feet, the Plum Creek #1 Wayne County to 610 feet, the Plum Creek #2 Wayne County to 450 feet, the Plum Creek #3 Wayne County to 450 feet, the Storm Tract 10 in Carroll County to 500 feet, the Storm Tract 10-2 in Carroll County to 70 feet, and the #1 Coila in Carroll County to 410 feet. Ten papers were published, including four articles in the Mississippi Department of Environmental Quality's *Environmental News*, five abstracts in the *Journal of the Mississippi Academy of Sciences* for 2008, and an abstract in the *Gulf Coast Association of Geological Societies, Transactions* for 2008. A new Office of Geology circular was published in 2008 in cooperation with the Office of Pollution Control. Circular 7 is a color guidebook for rocks, fossils, and semiprecious stones found in Mississippi's gravel deposits. This book also discusses the control of sediment runoff from gravel pits under the topic of nonpoint source pollution. "The Geology of Mississippi" manuscript of about half a million words and hundreds of color illustrations is still in progress.



Figure 006. Drilling core hole NGS-MMNS CH1 behind the Pearl River Basin Development District office and near the alternative type locality of the Moody's Branch Formation in Jackson, Mississippi. Picture (digital CD #48) taken on April 12, 2007.

Proposed work for the STATEMAP 2009 grant includes nine geologic quadrangle maps. These are the Cascilla, Holcomb, Avalon, Jefferson, and Tie Plant quadrangles in Tallahatchie, Grenada, Leflore, Carroll, and Montgomery counties in north-central Mississippi and the Collins, Hot Coffee, Williamsburg, and Seminary quadrangles in Covington and Jones counties in south-central Mississippi.

The Environmental Geology Division's geologists and technicians were involved in many projects in FY2008. The division's drill crew performed sampling and well construction work for the Surface Geology Division's STATEMAP

program, the Office of Land and Water Resources group, and specialized coring and well construction techniques for a local college and state university. Nine test holes were drilled for the STATEMAP program in central and southern Mississippi. Total footage drilled in the nine test holes was 3,630 feet. Samples were saved and archived in the Office's core and sample library. Seven test holes were drilled for the Office of Land and Water Resources in projects located in Pearl River, Smith, and Leflore Counties. Total footage drilled for these projects amounted to 1,570 feet. Drill cuttings were preserved for future analysis by geologists. One observation well for the division's Moody's Branch aquifer study had to be plugged and abandoned. Water level measurements indicated a "behind casing" leak which rendered the well unusable. A replacement well was successfully drilled and is currently in use. The division's drill crew drilled and constructed a seismic "listening" station well in Yazoo County for Millsaps College's Department of Geology. This test hole was 330 feet deep and was the second well of this type done in support of Millsaps. A core hole was drilled for the Mississippi Mineral Resources Institute of the University of Mississippi. This 401-foot core hole was located in Chickasaw County. The cores were boxed and taken to MMRI's offices for further study and analysis.

The division's Moody's Branch aquifer study is progressing. In the summer of 2008 requests were made to drill observation wells on the properties of Jackson Academy in Hinds County and Manchester Academy in Yazoo County. Both of these locations are ideal due to the depths expected and the structural position of the Moody's Branch Formation. Wireline log data are being correlated and spotted on topographic maps along trend southeast of the Jackson area into Scott, Smith, and Jasper counties. Locations for additional observation wells in this area are under consideration.



Figure 090. James Starnes at center looking at newly exposed vertebrae of the protoetid whale *Georgiacetus* in the Archusa Marl Member on the Chickasawhay River south of Quitman in Clarke County. Picture (digital CD #54) taken on July 17, 2008.

Environmental Geology's technicians and geologists wireline logged 113 test holes in 37 counties during FY2008. Cumulative footage logged was 58,060 feet or 10.99 miles of subsurface data. Logging requests were carried out for 17 water well contractors, one engineering firm, four state agencies, and two institutions of higher learning. The shallowest test hole logged was 62 feet deep in Simpson County, drilled by Water Well Services of Brandon, Mississippi. The deepest test hole was 1481 feet in Bolivar County, drilled by Mid-South Water and Machine Works of Cleveland, Mississippi.

The Environmental Geology Division's sample and core library was very busy during FY2008. The staff pulled samples and cores for 12 scientists from the oil and gas industry, out-of-state universities, and neighboring state geological surveys. A total of 99 boxes of cores and samples were pulled and refiled, 16 boxes of cores shipped to out-of-state clients, and 422 boxes of cores and samples were reboxed and archived. Higher prices for oil and natural gas continued to push interest in our sample library. Extension of new plays from adjacent states also resulted in a keen interest in subsurface samples and cores. The Office of Geology was also successful in obtaining a USGS grant this year for a complete inventory of our samples and cores. This is the first year of the grant, which will expand our data to a national database to be used by anyone who might have a need or interest in these cores and samples.

## Geospatial Resources

The Geospatial Resources Division focused its emphasis on remote sensing (RS) and geographic information systems (GIS) activities. The division manages the Mississippi Flood Map Modernization Initiative (MFMMI). This program is creating new county-wide digital flood insurance rate maps (DFIRMs) for 80 of Mississippi's 82

counties, pending continued funding by the Federal Emergency Management Agency (FEMA). These resulting DFIRMs and supporting digital data will be available on the Web. The new digital format, using modern technology including RS and GIS, promises to make a new map that will convey more information in an easy-to-use format. As of September 2008, current FEMA funding of MFMMI county-wide DFIRM flood mapping projects is \$19.4 million.

Another assignment for this division is to act as staff for the Mississippi Coordinating Council for Remote Sensing and Geographic Information Systems. The Council exists to set policies and standards that will promote the sharing of information, as well as facilitate the cost-sharing potential. The Council is also charged with oversight of the development of the Mississippi Digital Earth Model (MDEM). The Office of Geology is responsible for MDEM's development, and it is the Geospatial Resources Division that handles the assignment. MDEM consists of developing digital geographic information that will serve as the state base map. MDEM consists of seven layers of digital information that will be available on the Web: (1) geodetic control, (2) elevation and bathymetry, (3) orthoimagery, (4) hydrography, (5) transportation, (6) government boundaries, and (7) cadastral.

In early 2008, the division became responsible for monitoring orthophoto and planimetric mapping contracts for the Gulf Regional Base Mapping Program. Products from this work will be used by local governments, engineering firms and construction companies involved in the Gulf Region Water and Wastewater Plan. This project, which is managed by MDEQ, is an overall plan to identify water, wastewater, and storm water infrastructure needs in the six Gulf Region counties of Hancock, Harrison, George, Jackson, Pearl River and Stone. The purpose of the Plan is to provide infrastructure for long-term growth and recovery from Hurricane Katrina in these counties. The 1-foot and six-inch orthophotography and planimetrics developed will be of MDEM quality and made available for distribution through the Mississippi Geospatial Clearinghouse Web site at: [www.gis.ms.gov/Portal](http://www.gis.ms.gov/Portal).

The division maintains three web sites. For an information-rich site for oil and gas related information: [www.library.geology.deq.state.ms.us](http://www.library.geology.deq.state.ms.us). Another has a wealth of coastal data as a result of our twelve years of active research: [www.geology.deq.state.ms.us/coastal](http://www.geology.deq.state.ms.us/coastal). The division has added a web site for the Mississippi Flood Map Modernization Initiative (MFMMI): [www.geology.deq.ms.gov/floodmaps](http://www.geology.deq.ms.gov/floodmaps). By visiting this site the public and local government officials will be able to learn the current status of their county's DFIRM mapping project. Also, when a county's new preliminary flood maps are available, the public and local government officials will be able to download and review individual DFIRM map panels.

In FY2008 the Geospatial Resources Division dealt with MDEM, the GIS Council, the Mississippi Flood Map Modernization Initiative, and took delivery of new 1-foot and 6-inch color orthophotography covering the six Mississippi coastal counties. The new orthos were flown in the spring of 2007 and processed during the summer of 2007. The division began reviewing planimetric mapping data deliveries developed from the new orthos in March 2008.

Working with FEMA, the division updated the state's FY2008 flood mapping business plan and work continued on the county-wide flood mapping DFIRM projects. As of September 2008, new preliminary DFIRM flood maps for eighteen county-wide DFIRM projects have been delivered. Four additional counties are expected to have their preliminary DFIRMs delivered before yearend 2008. Between February and November, 2008, the pre-scoping and scoping of 41 counties was begun and completed with the final 20 county scoping reports being submitted in No-



Figure 000. From front to back are Joy Rushing, George Phillips, Alice Perry, and James Stames collecting from the fossil crab bed in the Coon Creek Tongue at Blue Springs in Union County, Mississippi. Picture (digital CD # xx) taken on September 8, 2008.

member to FEMA Region IV. A part of the scoping process is the holding of “Countywide Scoping Meetings” with a particular county’s officials and officials from each incorporated town or city in that county. These meetings were usually located at the county courthouse or emergency operations center for the county.

In FY2008 the division hosted two GIS Council meetings. During the past year the division continued work with the Mississippi Department of Information Technology Services (ITS), supporting the design and development of the Mississippi GIS Clearinghouse / Portal Project. The Portal houses and distributes all digital MDEM data for the state. The division will continue this work activity into the foreseeable future.

The geologic quadrangles and other publications that result from Office of Geology data collection activities are available for sale in the Map and Publication Sales Office on the ground floor of the 700 North State Street building. Also available are copies of all topographic map products for Mississippi that are produced by the U.S. Geological Survey.



## ENVIRONMENTAL PERMITTING

The professional staff of MDEQ spends thousands of hours each year developing various types of environmental permits which are then presented to the Environmental Quality Permit Board for issuance. The Permit Board issues, reissues, modifies, denies, transfers, and revokes Mississippi permits and certifications administered under the Clean Water Act, the Clean Air Act, the Resource Conservation and Recovery Act, the Surface Mining Control and Reclamation Act, state mining laws, and state water resource control laws.

MDEQ's Environmental Permits Division's (EPD) functions include reviewing the majority of the permit related issues including permit applications, meeting with the permit applicant, reviewing permit renewal applications, and making recommendations to the Permit Board. Currently there are over 15,000 sites in the permitting realm. Many of these sites have permits that by state and federal regulation expire every five years and have to be re-issued. As new companies come into the state and existing companies have changes or modifications these activities also require permitting actions. The Environmental Permits Divisions works closely with Mississippi Development Authority (MDA) in helping site these new industries to Mississippi. EPD believes that a key element in effectively addressing environmental issues surrounding greenfield projects is early interaction between the company and the Mississippi Department of Environmental Quality. EPD offers and encourages pre-application meetings. Time spent in refining the information needed for applications at the front end of a project typically reduces the overall time to bring a project to a decision point. Other MDEQ offices that work with permitting matters are the Office of Geology and the Office of Land and Water Resources. EPD is responsible for most environmental permitting done for the Office of Pollution Control, including:

- Air
- Air Title V
- Wastewater-State No Discharge
- Wastewater-Federal National Pollutant Discharge Elimination System
- Wastewater Pretreatment
- Storm Water
- Solid Waste
- Hazardous Waste
- Tire Programs
- Wetland 401 Water Quality Certifications

### Performance Improvements

In 2008, the Environmental Permits Division continued to issue timely air, wastewater, and solid waste permits while maintaining low permit backlog. Great effort has been expended by staff to incorporate Total Maximum Daily Loads (TMDLs) into NPDES wastewater discharge permits. New and reissued NPDES permits that contain TMDL related requirements will assist in restoring respective receiving streams to protective water quality. EPD staff has exhausted great resource to administer a timely and efficient permitting process for any project in the coastal counties associated with funding under Mississippi Gulf Region Water and Wastewater Plan.

EPD continued to partner with the Data Integration Division of MDEQ in the development of new functionality for the Agency's enterprise-wide data management system – *enSite*. *enSite* has become the agencies primary electronic storage database for information. This has made it possible for the department to provide much more information over the internet to the regulated community, other state agencies, EPA, and citizens. *enSite* also allows supervisors and upper management to be more knowledgeable about sites and more easily track and retrieve information. This is due primarily to effective training and e-business improvements.

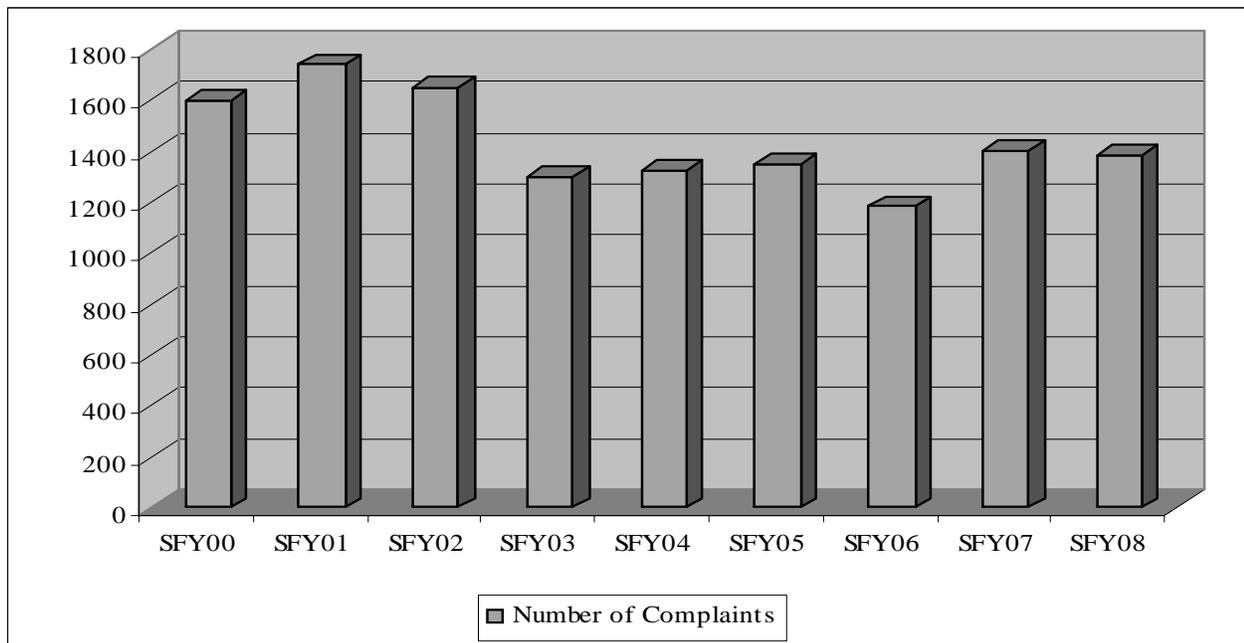
## Environmental Assistance

EPD continues to provide environmental assistance when requested. Based on the surveys conducted in 2007 and requests from small businesses in Mississippi, the Assistance program developed a new series of Assistance programs focused on federal programs. Specifically, the Assistance program focused on the National Environmental Policy Act (NEPA), the Toxic Substances Control Act (TSCA), and the Emergency Planning Community Right-To-Know Act (EPCRA). These federal programs were chosen to address the needs of small businesses in understanding both state and federal regulatory requirements which may impact their businesses. MDEQ staff developed brochures providing a brief overview of each of these topics and provided contact information regarding the programs. MDEQ staff intends to work with business organizations and associations to provide information and assistance specific to these topics through training and seminar opportunities.



## COMPLIANCE AND ENFORCEMENT

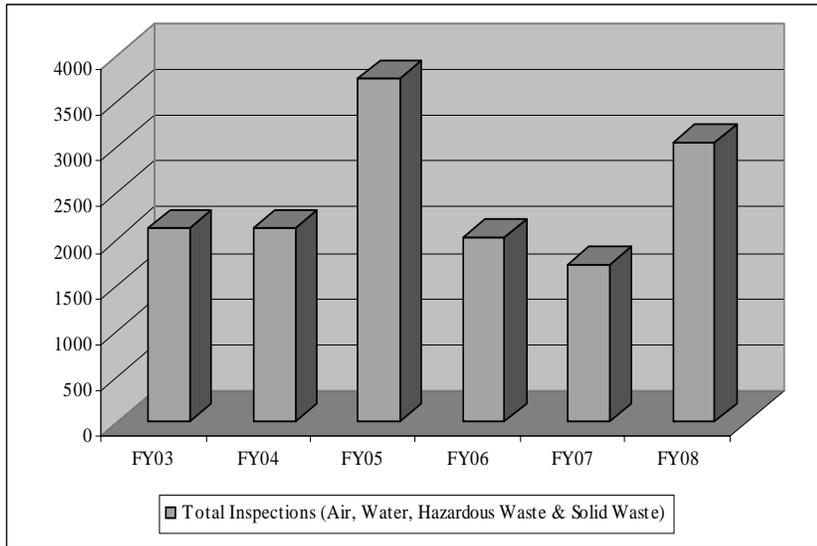
The Environmental Compliance and Enforcement Division (ECED) implements and oversees the majority of the compliance and enforcement programs for MDEQ. ECED is responsible for the regulation of over 15,000 sites for compliance with applicable air, water, hazardous waste, and non-hazardous waste permits and regulations. The goal is for continuous compliance with all the appropriate environmental laws, regulations and standards. Staff assists Mississippi businesses, industries, and farms with this activity. When a site fails to comply with the permit(s) or regulations, appropriate enforcement action is taken to promptly return the site to compliance. ECED, in conjunction with the Field Services Division, is also responsible for responding to citizen complaints regarding air pollution, water pollution, solid waste issues, and hazardous waste issues.



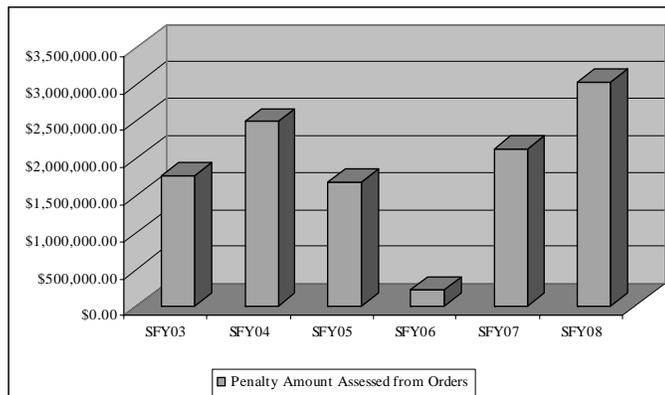
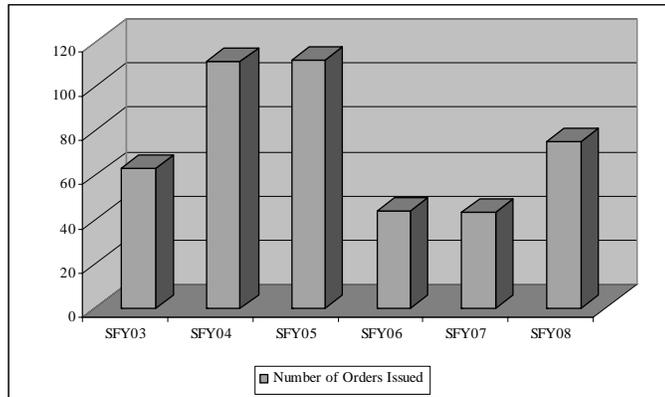
During State FY2008, the Office of Pollution Control received 1,387 complaints related to air pollution, water pollution, solid waste issues, and/or hazardous waste issues. When citizens report an environmental problem, they are asked to explain the nature of the problem and give the location of the problem, including directions to the site. A name is not required; however, if a name and contact information is provided, MDEQ either contacts the complainant during the investigation or provides the results of the investigation after the investigation is complete. OPC staff endeavor to investigate every complaint. (See Chart)

During State Fiscal Year 2008, the following numbers of on-site inspections were performed by ECED and the Field Services Division:

- 264 for compliance with air pollution regulations/permits
- 1678 for compliance with water pollution regulations/permits
- 175 for compliance with hazardous waste regulations/permits
- 929 for compliance with solid waste regulations/permits



During FY2008, ECED actions resulted in 75 Orders being issued for non-compliance with air, water, solid waste, and/or hazardous waste regulations/permits. Of the 75 Orders issued during FY2008, 46 contained provisions for a penalty with a total assessed penalty amount of \$3,026,817. When appropriate, MDEQ allows the use of Supplemental Environmental Projects (SEP), which are projects that go beyond what is required to comply, to offset a portion of the cash penalty. Three of the Orders allowed the use of a SEP.



## CLEAN UP OF CONTAMINATION

Accidents, spills, leaks and past improper disposal and handling of hazardous materials and waste have resulted in a number of sites across our country that have contaminated our land, water, and air. Through five programs, the Brownfields Program, the Uncontrolled Sites Program, the Voluntary Evaluation Program (VEP), the CERCLA Program, and the Underground Storage Tanks (UST) Program, the staff of the Groundwater Assessment and Remediation Division (GARD) is responsible for the protection of human health and the environment by overseeing the assessment and remediation of contaminated sites in Mississippi.

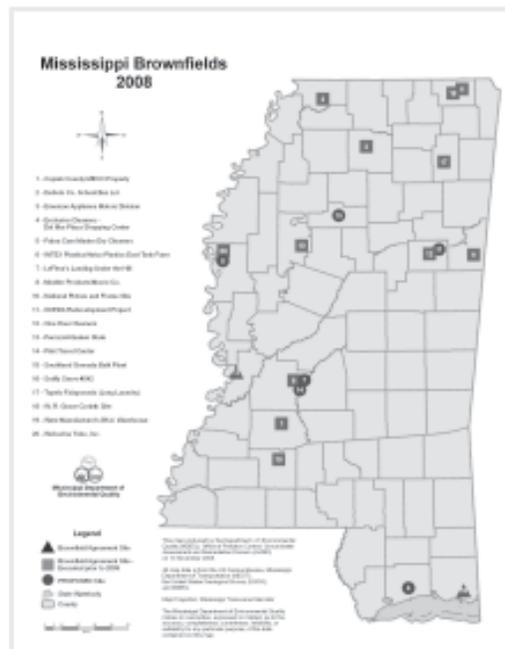
### Brownfields

During 2008, the Mississippi Department of Environmental Quality experienced continued interest in the Brownfields Program. This interest is attributed to efforts to educate parties about risk-based remediation and liability protection through effective outreach. In 2008, MDEQ reached two Brownfield Agreements, one with Pennzoil-Quaker State Company dba SOPUS Products and the Warren County Board of Supervisors, and the other with the City of Moss Point. The total number of Brownfield Agreements obtained to date is thirteen. MDEQ received one application in 2008 from the Moore Company for Moeller Products/Moore Co. Proposed Brownfield Agreement Site.

On March 27, 2008, in a letter to the Mississippi Department of Environmental Quality, Region 4 of the Environmental Protection Agency (EPA) acknowledged that MDEQ has demonstrated that the Mississippi Brownfields Program meets the requirements of CERCLA Section 128(a) for a State Response Program. Under the existing federal brownfields law, Congress expressly provided a federal enforcement bar under CERCLA §106(a) or §107(a) to all landowners/developers who have enrolled their brownfield site into the State Response Program and who are successfully completing (or have completed) the state prescribed remedial actions. With the issuance of this acknowledgement letter, the partnership between EPA and MDEQ is further strengthened allowing for greater clarity and less uncertainty in the assessment, cleanup, and reuse of sites moving through the Mississippi Brownfields Program.

In August 2008, the Commission on Environmental Quality approved a Brownfield Agreement with the City of Moss Point regarding the remediation of the former Swifty-Serve #542 located in Moss Point. Prior to 2003, Swifty-Serve operated as a convenience store with fuel dispensers and underground storage tanks. The City of Moss Point purchased the property in 2002 as a part of the city's Phase II Waterfront Plan which involved the construction of the Pelican Landing Convention Center.

The gas station and the fuel dispensers were subsequently demolished and removed from the location, but three 10,000 gallon underground storage tanks (UST), two fuel dispenser islands, and the product piping remained on the location just feet from the Escatawpa River. In 2007, Mayor Xavier Bishop of the City of Moss Point requested assistance from MDEQ through its Targeted Brownfield Assessment Program to perform an environmental assessment to aid the city in determining the status of the



Tank being removed from former Swifty-Serve in Moss Point

USTs and if soil or groundwater had been impacted.

Through the Target Brownfield Assessment (TBA) Program, MDEQ oversaw the environmental assessment of the site which was geared to evaluate the soil and groundwater impact of petroleum contaminants. The environmental site assessment revealed that empty USTs were still on site, but not properly closed in accordance with MDEQ UST regulations. In order to complete the assessment under the USTs, the USTs were removed and disposed along with the fuel distribution piping.

## Underground Storage Tanks

The goal of the Underground Storage Tank Branch is to protect groundwater from leaking underground storage tanks. To meet this goal there is a two-pronged approach. First, a compliance program inspects UST facilities in order to ensure the systems do not leak. In Mississippi, the UST compliance personnel are responsible for ensuring approximately 8,000 tanks have the appropriately maintained equipment in order to protect groundwater. Secondly, in the event of a release, there is a fund available for eligible tank owners to help in the assessment and cleanup resulting from leaking USTs. The Mississippi Groundwater Protection fund began in 1987 and has committed \$132 million to eligible tank owners for the assessment and clean up of sites contaminated from leaking underground storage tanks. The average fund commitment per site has been \$140,000. This past fiscal year \$7.3 million were reimbursed to eligible tank owners. This year 47 new sites were assessed and 114 were closed. The map to the right indicates the number of remediation systems in the state of Mississippi.



## Uncontrolled Sites

Over the past twelve months, GARD actively oversaw 182 sites. During that same timeframe, the number of new sites brought to GARD's attention was 45, bringing the total number of sites in MDEQ's public record to 1,649 sites. Also, MDEQ issued "State No Further Action" (SNFA) letters for 12 of these sites that were evaluated and remediated to levels protective of human health and the environment. In addition, MDEQ issued Restrictive Use Agreed Orders for 11 sites, thereby allowing the sites to be reused with certain activity and use limitations. The staff continues to respond expeditiously to requests from other governmental agencies for the review of environmental assessments and remediation of contaminated sites and those sites with economic development potential.



Demolition Work at Abandoned Vicksburg Chemical Plant

## Voluntary Evaluation Program

The Voluntary Evaluation Program (VEP) offers participants an opportunity to receive an expedited review of site characterization and remediation plans and reports for uncontrolled sites that they have an interest in. The VEP is funded entirely by these participants who pay for MDEQ's oversight costs. Typically, individuals involved in property transfers find the VEP attractive because of the expedited review process.

One VEP site, Bausch and Lomb Ferson Optics, in Ocean Springs, appears to be a big part of the city's plans to build a "town center" off of Government Street. The development will span eight acres on the north and south side of Government Street. Early conceptual drawings included a municipal building possibly a city hall or library,



Hydrogen Release Compound is being injected to remediate a dry cleaner on the Gulf Coast

with residential, commercial, retail and green space. The facility manufactured optical lenses on the site before closing its facility in 2003, and chlorinated solvents released during that time now affect soil and two groundwater aquifers.

## **Comprehensive Environmental Response, Compensation, and Liability Act**

Oversight of the site assessment restoration of hazardous waste sites at federal facilities continues to be a large portion of the CERCLA Program. Oversight is conducted at seven Department of Defense Sites, a Department of Energy site (Salmon Test Site), a NASA facility (Stennis Space Center) and several formerly used defense sites. MDEQ is funded for this oversight work through agreements with the Department of Defense, the Department of Energy, and NASA. Through the grants from the Environmental Protection Agency, CERCLA staff performed preliminary site assessments, site investigations, and site inspections at potential National Priority List (NPL) Sites, coordinated with EPA on emergency/removal projects and were responsible for the oversight and assessment of three Superfund sites in the state – Davis Timber in Hattiesburg, American Creosote in Louisville, and Wood Treating in Picayune. The estimated cost at this time for remediation of these three sites is between \$70,000,000 and \$75,000,000. The state will ultimately have to pay for 10 percent of these costs or \$7,000,000 to \$7,500,000. Additionally, a new NPL site, Sonford Products in Flowood, was added in 2007. The costs to remediate the Sonford Products site is not known at this time. The staff continues to respond to complaints and questions concerning contaminated sites, remediation levels, and environmental assessment criteria.



Wood Treating Superfund Site in Picayune

## **Emergency Response**

During FY 2008 the Emergency Services Branch continued to respond to emergencies all across the state. Expenditures for clean ups exceeded \$600,000.00, while the response staff dealt with approximately 1,400 calls for assistance or to reported emergency releases.



Following Hurricane Gustav, the Emergency Services staff continued collecting and disposing of numerous small containers and drums through November of 2008.

Emergency Services staff also provided Hazardous Materials Awareness Training to the cadets of the Mississippi Highway Safety Patrol, and participated in numerous exercises and drills with state, federal and local counterparts and companies such as pipelines and refineries that operate in the state.

Homeland Security remains a top priority for training and planning. The Emergency Services staff continues to work with numerous agencies including fire and police at the local level, other state agencies, EPA, U.S. Coast Guard, F.B.I., and other federal agencies to conduct well coordinated responses, in order to protect Mississippi's citizens and environment.

MDEQ's four-man Emergency Response Team is on-call statewide 24 hours a day, seven days a week. MDEQ and the Mississippi Emergency Management Agency (MEMA) work together to provide effective around-the-clock spill response. MEMA is notified of emergencies by calling 1-800-222-6362. They in turn contact MDEQ personnel who provide on-site response and technical assistance.

# SOLID WASTE MANAGEMENT

The Solid Waste programs at MDEQ worked on numerous solid waste issues, projects and programs throughout 2008 to assure the proper management of solid wastes, to promote the reduction and recycling of solid wastes, and to plan for the future solid wastes management needs of the state.

## Solid Waste and Recycling Status Reports

MDEQ is charged with collecting information and data to measure the status of solid waste disposal, recycling and waste reduction in the state each year. MDEQ also develops reports that summarize this information for presentation to the Governor, the Legislature, and other interested stakeholders. Each year, MDEQ collects an annual report from the owners of permitted solid waste management facilities on solid waste disposal information for the preceding calendar year. Solid waste management facilities that report to MDEQ include commercial and non-commercial landfills, commercial and non-commercial rubbish disposal sites, composting facilities, and land application sites.

In 2008, MDEQ developed a report on solid waste disposal activities conducted during Calendar Year 2007. This report indicated that over 8.3 million tons of wastes were disposed at permitted landfills and rubbish sites in Mississippi. Approximately 40.5 percent (3,384,507 tons) of the total waste was disposed at commercial landfills, 39.2 percent (3,275,055 tons) at non-commercial landfills, 19.4 percent (1,623,785 tons) at commercial rubbish sites, and 0.9 percent (74,622 tons) at non-commercial rubbish sites (see Figure 1).

About 5.0 million tons of wastes were disposed at commercial disposal facilities and the remaining 3.3 million tons of wastes were disposed at noncommercial disposal facilities. Mississippi received a total of 857,929 tons of solid waste from out-of-state sources representing approximately 10.3 percent of the total solid waste that was disposed in the state during Calendar Year 2007. In addition, a total of approximately 41,000 dry tons of wastes were applied at the permitted land application sites.

In addition to the report on waste disposal, MDEQ submitted the agency's annual report on the status of recycling and pollution prevention in Mississippi to the Legislature in January 2008, as required by state law. This report included the results of a survey of local governments throughout the state on the recycling services offered to their citizens and presented these findings for the consideration of the Legislature.

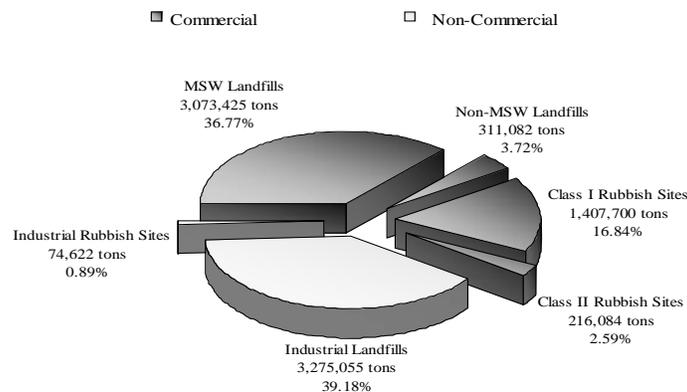


FIGURE 1

The status report indicated that approximately 44.7 percent of the state's population (or 1.3 million people) had access to municipal waste recycling services with about 20 percent of the population (up from 15 percent from the preceding year) having access to curbside recycling programs and 24.7 percent having access to drop-off recycling programs. The report also reported recycling conditions for calendar year 2007 for white goods, yard wastes, waste tires and other large volume waste streams in the state. MDEQ is in the process of compiling and submitting a supplemental status report on recycling and pollution prevention in early 2009 updating the information in the 2008 status report.

### **Solid Waste Planning**

The MDEQ Solid Waste Programs also work with local governments around the state to develop and implement long range solid waste planning. Each local government in Mississippi is required by state law to develop and implement a comprehensive local, solid waste management plan for a 20 year period. In 2008, MDEQ worked with several communities to complete the development of updated and amended local solid waste plans. The communities for which these updated comprehensive plans were finalized included Jackson, Amite, and Madison Counties. For these three counties, the plans also included the municipal governments located in those counties. In addition to the development of comprehensive updated plans, MDEQ also worked on amending existing plans to assure adequate capacity. These amendments were often conducted to add new disposal facilities locally or to make other changes to local solid waste plans in the manner that solid wastes were being managed. Communities that completed modifications to their local solid waste plans in 2008 (in the order of completion) include: Pearl River County, Three Rivers Solid Waste Management Authority, Grenada County, Kemper County, Hancock County, Clarke County, Neshoba County, Rankin County, and Jackson County. These planning amendments were important to assist local governments with providing needed disposal capacity and services for management of solid wastes.

### **Solid Waste and Waste Tire Assistance Programs**

The Solid Waste Programs also continued the management and dispersal of various grant program funds. Through the Solid Waste Policy, Planning and Grants Branch, MDEQ awarded over \$2.8 million in Fiscal Year 2008 for solid waste projects, solid waste planning projects and waste tire projects across the state. Of that total, almost \$2.066 million was awarded in Solid Waste Assistance Grants to local governments. These grants are used by local governments to clean up illegal dumps, establish collection programs for bulky wastes and recyclables, fund the hiring of a local solid waste enforcement officer, for household hazardous collection days/programs, for public information efforts on solid waste and recycling programs, and for other waste management activities at the local level. These funds were awarded through two different categories of grants: Non-competitive (or allocated) grants and competitive grants.

#### **Solid Waste Assistance Grants – FY 2008**

**\$878,414 - Total Non-Competitive Grants**  
**68 Counties Received Non Competitive Grants**

**\$1,187,552 - Total Competitive Grants**  
**38 Municipalities and Counties Received Competitive Grants**

The Solid Waste Policy, Planning and Grants Branch also assisted in planning efforts across the state, working with local governments to assist in the development of long-range plans and goals for solid waste management and recycling. Planning grants totaling \$71,100 were awarded to Tallahatchie and Sunflower Counties to develop and update comprehensive solid waste management plans for their communities.

In addition, the Solid Waste Policy, Planning and Grants Branch continued in 2008 to develop and implement the state's strategy to achieve statewide recycling of waste tires. During FY 2008 the recycling rate for waste tires processed in the state was over 90 percent of the tires collected. In addition, 15 new waste tire grants totaling \$697,900 were awarded to local governments to fund local waste tire collection and clean up programs during FY 2008. These new waste tire program grants along those tire grants previously awarded assisted local governments across the state in the proper collection and disposal of over 630,000 passenger tire equivalents in calendar year 2007.

### **Waste Tire Grants – FY 2008**

**\$1,170,890 - Total Waste Tire Grants Awarded**  
**380,800 - Waste Tires Collected**

Counties receiving waste tire grants during FY08 included: Alcorn, DeSoto, Hancock, Harrison, Hinds, Lamar, Lawrence, Marshall, Pearl River, Stone, and Tishomingo Counties and the City of Jackson and the Northeast Mississippi Regional Solid Waste Management Authority

Finally, during 2008 the MDEQ also was able to secure and award an additional \$95,000 in grant funds from the U.S. EPA to the three gulf coast counties of Hancock, Harrison and Jackson. These grants were awarded to the three counties to assist in collecting and managing the increased amounts of household hazardous wastes generated by residents in the coastal county in renovating and re-constructing houses and other residential structures damaged and destroyed by Hurricane Katrina.

### **Waste Tire Management Program**

In 2008, the MDEQ Waste Tire Management Program experienced continued success in achieving significant recycling of waste tires in the state. This success was reflected in the annual report prepared and released in 2008 measuring the state's waste tire recycling rates for Calendar Year 2007. This report indicated that the overall waste tire recycling rate for Mississippi processors in 2007 was close to 95 percent and the recycling rate for those tires generated in Mississippi was close to 80 percent. It is anticipated that the state's waste tire recycling rates for 2007 will continue to exceed the current national average of 73 percent.



MDEQ conducted compliance assurance activities at over 140 waste tire collection sites, 12 waste tire processing and collection facilities, dozens of tire retail businesses and managed the permitting and reporting activities of 112 registered waste tire haulers in 2008. Also, just under 100 complaints involving the mismanagement or unauthorized dumping of waste tires were reported to and investigated by the MDEQ at sites across the state of Mississippi. In addition, the Waste Tire Management Program reviewed or otherwise handled the processing of various applications for waste tire management permits and authorizations for waste tire processing facilities, collection sites and disposal facilities. Finally, MDEQ began other waste tire program efforts in 2008 that are anticipated to be completed in the coming year. Some of these program changes or upgrades include continued work to attract new waste tire recycling businesses to south Mississippi and the development of electronic reporting and record keeping for waste tire processing and collection facilities in the state.

### **Solid Waste Training, Certification and Outreach Programs**

The MDEQ Solid Waste Programs also administers training and certification programs for solid waste professionals in the state of Mississippi and conducts outreach efforts to the public and to stakeholders in the state through partnerships with various organizations. MDEQ partners with the state and national chapters of the Solid Waste

Association of North America (SWANA) to provide training and certification to municipal solid waste landfill operators in the state. There are currently 43 certified commercial landfill operators in the state. In 2008, MDEQ issued new or renewed certifications for 8 operators and provided continuing education training in partnership with the State SWANA Chapter at the chapter's Spring and Fall Conferences.

In addition, in cooperation with a state advisory group, MDEQ developed and hosted training and examination sessions for Class I rubbish operators in the fall of 2007 in Jackson, Tupelo and Hattiesburg. In 2008 MDEQ issued the resulting certificates from those training and testing events for 127 Class I rubbish site operators. MDEQ also conducted an additional training and certification event for new Class I rubbish site operators in April in Jackson. MDEQ also worked with the State SWANA chapter to provide CEU training opportunities through the SWANA organization's spring and fall conferences.

In addition to these training activities, MDEQ also partnered with various other organizations in the state to provide outreach and education on a variety of solid waste management issues. Throughout the year, MDEQ participated in conferences, conventions and training sessions of these organizations, which included the Mississippi Municipal League, the Mississippi Recycling Coalition, the Mississippi Association of Supervisors, the Mississippi Manufacturers Association, the Mississippi Chapter of the Solid Waste Association of North America, Keep Mississippi Beautiful, the Southeast Recycling Development Council, and other state and local organizations and agencies.

In 2008, MDEQ also continued its partnership efforts with EPA, the state's LMOP task force, and other stakeholders to promote the development of landfill gas energy projects in the state. As has been previously indicated, Mississippi currently has one operational landfill gas project that was developed at the Pecan Grove Landfill located near Pass Christian. Through LMOP, MDEQ has also identified 12 other landfills that appear to have good potential for future project development to generate about 45 megawatts of energy. MDEQ continued its work this year to meet with various landfill owners, landfill gas energy project developers and with local officials to promote the consideration of landfill gas energy projects in the state. It is anticipated that these partnering efforts will result in additional landfill gas energy projects in the future which will provide needed environmental and economic benefits to our state.

In the 2008 Session of the Mississippi Legislature, legislation was adopted that required MDEQ to develop and implement a statewide educational program to inform the public on the safe disposal of home-generated medical sharps to promote proper management and disposal of such household medical devices as syringes, needles, lancets and other similar items. MDEQ began efforts to identify the primary issues associated with the management of home generated sharps and to identify stakeholders and organizations that should have input and participation in developing the outreach and educational program efforts. The law requires that MDEQ have the educational program developed by no later than July 1, 2009, and have the program fully implemented no later than January 1, 2010.

### **Development of Solid Waste Regulations and Guidance Documents**

MDEQ's solid waste programs have the responsibility to develop and administer state regulations and guidance on managing various types of solid waste. In 2008, the agency initiated efforts to develop and provide needed guidance on key solid waste management issues. Included in these issues was the development of the MDEQ's recommended conversion factors for converting solid waste volumes to weight (cubic yards to tons). This guidance was provided to operators of solid waste disposal facilities in early 2008 with the Department's annual reporting form package. These updated conversion factors are especially important because the law requires that solid waste disposal facilities record the incoming tonnage of waste for each load received. Predominately, the state's Class I and Class II rubbish sites in the state that are not likely to have on-site or readily accessible weight scales for

determining the weight of each incoming load. Consequently, MDEQ focused its efforts in revising and updating the conversion factors on the different types of rubbish wastes. These new conversion rates will assist these rubbish sites in more accurately documenting and recording incoming tonnage as the law requires.

In addition to the development of the agency's guidance on solid waste conversion factors, MDEQ developed other guidance documents to provide information and assistance to various stakeholders. These other guidance documents included: an update of the White Goods Guidance Document to assist local governments in implementing white goods collection programs, guidance on the management and disposal of Compact Fluorescent Light Bulbs (CFLs) to assist consumers on the proper methods of disposal for CFL's; an update of the State's Guidance on the Development of a Comprehensive Local Solid Waste Management plan; and, guidance on the process for requesting consideration for emergency waste management authorizations in the wake of a natural disaster.

MDEQ began a process to re-evaluate and amend the state's Nonhazardous Solid Waste Management Regulations. The agency invited public comments at the beginning of the process to insure that the comments and recommendations of various stakeholders would be considered as the regulations were amended and enhanced. This process will continue on into Calendar Year 2009 and will be concluded with a more formal public participation and input process on the proposed changes.

### **Byproduct Beneficial Use Program**

MDEQ renewed efforts in 2008 to inform and promote the agency's program for the beneficial use of nonhazardous byproduct materials that would otherwise be disposed in landfills. The state's beneficial use regulations allow for industries to request that their industrial by-product materials be evaluated for use in the place of products or raw materials. If the MDEQ evaluation confirms that the material has suitable physical and chemical properties for the proposed use, then MDEQ issues a beneficial use determination on the material which means that the use of the material can be conducted in the state and will not be regulated as a solid waste. There were eight new beneficial use determinations that were issued in 2008 for uses that involved by-product materials including wood fired boiler ashes soil amendment uses, coal ash construction uses, and lime by-product soil amendment uses, flue gas desulfurization sludge soil amendment uses and various other material uses. In addition, evaluations continued on several beneficial use demonstration projects involving industrial by-product materials. While MDEQ has not collected information on the volume of materials distributed for re-use in 2008, reporting to the agency for Calendar Year 2007 indicated that over 260,000 tons of by-product materials were beneficially used in the State of Mississippi.

### **Disaster Debris Management**

In 2008, MDEQ's solid waste programs worked with federal, state and local agencies and organizations on the management and clean up of significant amounts of debris generated by natural disasters in the state. In April of 2008, the Jackson, Mississippi metropolitan area and several outlying counties were hit with tornadoes that caused tremendous damage to residential and commercial areas. MDEQ worked with various local governments in the area to develop emergency debris management sites where vegetative debris was chipped and recycled for mulch and boiler fuel uses. The agency also worked with local governments on the collection and disposal of a significant amount of structural debris from damaged and destroyed residences and commercial buildings. In August of 2008, the state also was skirted by Hurricane Gustav causing damage along the western Gulf Coast communities and in several counties in southwest Mississippi. MDEQ again developed and distributed guidance on the management of debris from the hurricane damage and worked with local governments to develop debris management plans and sites for collection and chipping of the tremendous amount of vegetative debris.

MDEQ also worked in 2008 with the EPA and FEMA on conducting continued groundwater monitoring around the emergency debris sites on the Gulf Coast that received much of the mixed building and structural debris for disposal

from Hurricane Katrina. In addition, MDEQ with assistance from EPA provided additional grant funding to the three coastal counties to help support Household Hazardous Waste (HHW) collection efforts. The three coastal counties had experienced a tremendous increase in the amount of HHW that has been generated in cleanup, recovery, and reconstruction.

In addition, as the debris clean up has been completed, MDEQ continued its work in 2008 with Gulf Coast communities impacted by the storm to assess and determine local waste management needs in the aftermath of Hurricane Katrina through the “Gulf Coast Solid Waste Initiative” to address the waste disposal capacity needs and long term waste management needs on the Gulf Coast. This initiative will address the needs and future plans of local governments on vegetative disposal needs, white goods, household hazardous wastes, electronics wastes and other waste problems that have been created or magnified by Hurricane Katrina. Finally, MDEQ also continued its work to monitor the potential post-closure impacts to the groundwater from the temporary emergency debris disposal sites along the Mississippi Gulf Coast. After Hurricane Katrina, MDEQ initiated an expedited environmental assessment process to locate temporary disposal sites for the millions of cubic yards of debris created by the hurricane. Following the closure of these temporary sites, MDEQ with assistance from FEMA has constructed monitoring well systems at each of the sites and in 2008 continued conducting groundwater monitoring events for the sites analyzing and assessing samples from these well systems.

## Recycling Education

The Recycling and Solid Waste Reduction Program at MDEQ is charged with working with local and state governments, private sector organizations, non-profit organizations, and the general public to increase recycling and solid waste reduction activities across the state. The program provides both educational and technical assistance to all groups in the state to increase the awareness and the importance of recycling and solid waste reduction measures.

The program partners with numerous organizations in the state including the Mississippi Recycling Coalition, Keep Mississippi Beautiful and its local affiliates, and the Mississippi Soft Drink Association. In FY2008 the Recycling and Solid Waste Reduction Program conducted site assistance visits, gave presentations to organizations and schools across the state, and provided recycling and solid waste information via exhibits at various events.

- \* Two K-12 schools were visited.
- \* Two college and university programs were visited.
- \* Four state agency programs were visited.
- \* Five presentations or exhibits were conducted for government organizations.
- \* Four presentations or exhibits were conducted for community groups.
- \* Two presentations were conducted for industry group and associations.
- \* Three commercial recyclers were inspected.
- \* Two recycling programs for businesses other than recycling were inspected.

The program also utilized a recycling education display that was made available to libraries and other organizations across the state for exhibition to the general public.



## **POLLUTION PREVENTION**

The purpose of MDEQ's Pollution Prevention Program within the Environmental Permits Division is to:

- Provide pollution prevention information and technical assistance to local government officials, federal officials, industrial officials, consulting engineers, and system operators on hazardous and non-hazardous waste management and pollution prevention practices.
- Review, manage, and monitor the waste minimization plans, annual waste minimization certified reports, and the EPA/Mississippi Pollution Prevention (P2G) Grant.
- Coordinate/partner with both states and the federal government (e.g. DoD) and non-governmental entities to promote effective pollution prevention practices.

During FY 2008, the MDEQ Pollution Prevention Program accomplished the following program elements:

- Reviewed and approved 11 industry waste minimization plans
- Twelve (12) P2 Ready Mix Concrete site visits
- Reviewed and monitored 198 annual waste minimization certified reports
- Met all conditions of the 2008 EPA/Mississippi Pollution Prevention (P2G) Grant
- Pollution Prevention on-site visits was provided to five businesses or industries in five different SIC Codes
- Compliance assistance was provided to three small businesses in 3 different SIC Codes
- Permitting/reporting compliance assistance activities was provided to six facilities in 6 different SIC Codes

### **Key Pollution Prevention Activities**

MDEQ introduced enHance, an Environmental Stewardship Program, in July 2008. The program is designed to recognize environmental leaders in the state. There are three membership levels: Associate, Steward, and Leader. In order to be eligible, organizations must have an environmental policy, an eligible environmental project, a defined environmental management structure, and a commitment to environmental compliance. The charter membership class will be announced in January of 2009 and a recognition luncheon will follow in the spring. The second round for membership application will open on July 1, 2009. Eligible organizations include industries, businesses, government agencies, schools, associations, and other similar groups.

The pollution prevention group is working with the Mississippi Concrete Industries Association and concrete facilities throughout the state to identify and promote water reuse and other pollution prevention opportunities at ready-mix concrete plants. Waste water generated at these facilities can have a high pH and high levels of suspended solids. A training seminar on pollution prevention opportunities, combined with regulatory information, was held in October of 2007. Checklists for pollution prevention and regulatory requirements were provided. Pollution prevention efforts will assist concrete operations in meeting permit requirements and minimizing discharge of pollutants to state waters.

The pollution prevention group is continuing to work on Mercury Reduction efforts. An amalgam recycling display was provided for dentists at the regional training meetings held during the winter. The automotive switch recycling program, administered through the National Vehicle Mercury Switch Recovery Program, now has 65 participants. The recovery fee for automotive mercury switches returned was recently raised to \$4 from \$1. The P2 group participated in a Hospital Workshop that was held in partnership with EPA Region 4 and the MDEQ permitting and compliance branches. Pollution prevention for mercury, medical waste, and solid waste was addressed.

The P2 group has been working with the Mississippi Department of Education and schools to promote an EPA software program for schools, HealthySEAT, a comprehensive unique software tool to help school districts evaluate and manage their school facilities for key environmental, safety and health issues. The software program has been modified to include Mississippi tools and regulations; the state version should be available electronically at the beginning of 2009. Presentations on the software have been made at two seminars to school administrators and nurses.

A workshop on Best Practices in Collision Repair was held in November 2007. Representatives from automotive repair facilities and high school and community college training programs attended the seminar to learn about painting, mixing, and cleanup techniques to reduce emissions and exposure. Additional instruction on best practices in spray paint application is being sponsored by MDEQ through a certified instructor at Hinds Community College. Best practice techniques, using EPA toolkits and a laser application tool, are being incorporated into collision repair student instruction.

### **Toxic Release Inventory**

The Toxic Release Inventory is required under Section 313 of the federal Emergency Planning and Community Right-To-Know Act of 1986. This report is required to be submitted every year by facilities that utilize toxic substances in their manufacturing processes if the facility has in excess of 10 full-time employees and falls into certain Standard Industrial Classification codes as designated by the EPA. These facilities report how toxic substances are utilized in their manufacturing processes and how and to what media they are emitted to the environment. Every year, over 250 facilities from across the state submit over 1,000 reports to MDEQ, as required by federal law.



Vehicle Mercury Switch Recovery

## STATE AND FEDERAL GRANTS AND LOANS PROGRAMS

### Section 319 Nonpoint Source (NPS) Pollution Control Grants

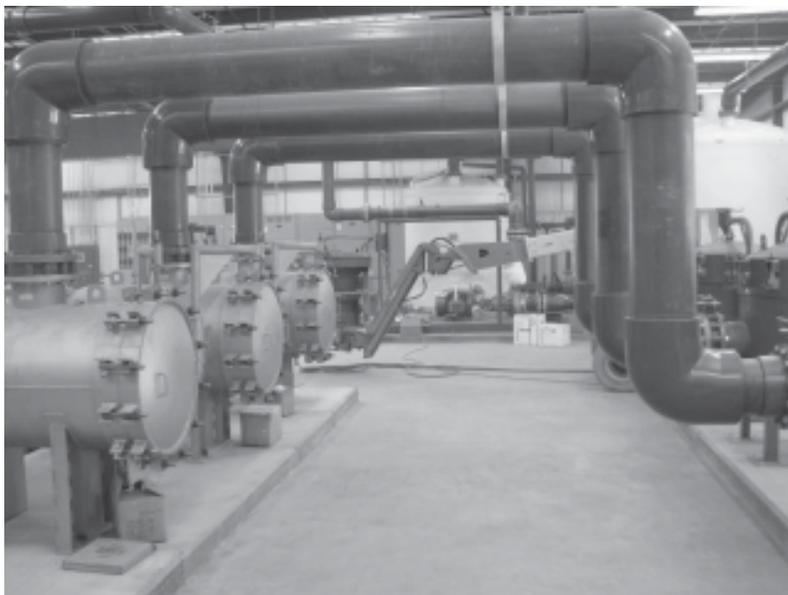
MDEQ in cooperation with a number of federal, state, and local stakeholders has been successful in developing a comprehensive statewide NPS pollution control program to help protect and restore our valuable water resources. The state's NPS Program fulfills the requirements of Section 319 of the Clean Water Act (CWA) and section 6217 of the Coastal Zone Act Reauthorization Amendments (CZARA), two federal laws with NPS pollution control provisions.

The MDEQ currently has seven active grants, two of which will be closed out in 2008. Over these seven grant periods, there have been 80 different projects funded. These include: water-quality monitoring projects; demonstration projects of Best Management Practices in watersheds; agricultural chemical waste disposal; ways of converting dairy cow wastes into electrical power and preventing possible stream pollution from those wastes; industrial plant demonstration projects that focus on preventing NPS pollution in industrial watersheds; coastal streams basins restoration; a conservation easements program for farmers and land-acquisition projects that focus on acquiring sensitive parcels of land that can intercept or buffer NPS pollution.

In FY2008, MDEQ received approximately \$3.7 million in Section 319 Grant funds. Of this amount, four percent is allocated for administrative work, 17 percent for assessment and monitoring, 27 percent for program operation and statewide education and public outreach projects, and 52 percent is allocated for priority watershed restoration and protection projects primarily in the Pearl River Basin.

### Water Pollution Control Revolving Fund

During FY2008, MDEQ funded six new projects for a total of \$42,150,804 from the Water Pollution Control Revolving Loan Fund (WPCRLF) program. This program provides low interest loans to public entities in the state for construction, repair, or replacement of wastewater, storm water, and nonpoint source pollution projects. Funding for these projects comes from federal grants, state match, repayments, and interest on deposits. Since Hurricane Katrina, the department has been working with the loan recipients in the Coastal Counties to provide repayment forbearance periods when requested due to the impacts of the storm.



### Water Pollution Control Emergency Loan Fund

This program provides loans to communities for the emergency construction, repair, or replacement of wastewater collection and treatment facilities. This fund has \$2,500,000 available for such emergency projects.

MDEQ encourages communities throughout the state to utilize this program whenever emergency wastewater projects are needed. Since Hurricane Katrina, the department has been working with the loan recipients in the coastal counties to provide repayment forbearance periods when requested due to the impacts of the storm.

## OUTREACH

### Nonpoint Source (NPS) Pollution Education Programs

Nonpoint Source Pollution (NPS) is rainwater runoff that picks up and carries away a variety of pollutants as it flows over streets, parking lots, construction sites, or farm lands and finally deposits them into rivers, oceans, and underground sources of drinking water. These pollutants include excess fertilizer, sediment, nutrients, pesticides, oil and grease, and bacteria from faulty septic systems. The NPS Program concentrates on many public outreach and education programs that will increase awareness and move citizens to actions to improve their quality of life.

#### 1. Watershed Harmony Musical Puppet Theater

A 30 minute musical production with seven songs, a multi-level stage, and 10 puppet characters. This entertaining puppet show teaches responsible environmental stewardship of state waters and how Best Management Practices (BMPs) and planning can reduce the impacts of polluted runoff. During 2008, the show reached a total of about 8,629 students and adults.



#### 2. Mississippi and Yazoo River Boat Tours for Students

A new NPS project to educate students about the Mississippi and Yazoo River watersheds was begun in the Fall of 2008. A total of 1,875 students and teachers toured the rivers on a pontoon boat where they viewed land uses on the shore and water uses in the industrial harbor that might impact water quality in the two watersheds.

#### 3. Storm Drain Marking

This program promotes awareness of the water quality impacts of polluted runoff in urbanized communities. Small plastic disks are placed by local volunteers on storm drains with the message "Dump No Waste, Drains to River". During 2008, volunteers glued the markers to 400 storm drains and distributed door hangers to homes in Natchez, Meridian, and Hernando, and on the campuses of Delta State University and Mississippi State University.

#### 4. Adopt-A-Stream Program

A program that promotes environmental stewardship by training volunteer citizens about stream ecology, aquatic life, and water chemistry. Volunteers attend a two-day water education workshop to learn how to monitor a stream, conduct a stream cleanup, or mark storm drains. In 2008, approximately 55 people attended these workshops.

#### 5. Enviroscape and Groundwater Model Distribution

During 2008, MDEQ staff reached over 5,000 students, teachers and the general public with water pollution prevention and water quality presentations. Over 87 water models have been distributed throughout Mississippi to county MSU Extension Service Offices, Department of Health offices, Soil and Water Conservation Districts, Environmental Learning Centers, the Choctaw Indian Reservation and other organizations.



#### 6. Environmental Teacher Workshops and Student Environmental camps

Over 445 educators attended 27 CEU-approved

workshops conducted statewide during 2008. In addition, four student Ecology day camp sessions were conducted with over 97 students in attendance.

### **7. Envirothon Competition for High School Students**

This competition tests the knowledge of water, soils, forestry, wildlife, and current environmental issues. In 2008, there were 432 high school students, 154 team advisors (with 72 teams) from 31 of counties active in the contest. MDEQ assists with Envirothon training, the steering committee, and statewide competition.



### **8. National Environmental Conference**

Project Learning Tree hosted in Mississippi MDEQ assisted as a sponsor and coordinator of this annual conference where attendees from all 50 states and Japan converged in Jackson, May 12-16, 2008.

### **9. Storm Water Workshops**

Storm water workshops were held in Mississippi's three Coastal counties. One, entitled "Go with the Flow," targeted local community leaders, planners, and developers and focused on review, implementation, enforcement and updating of NPDES Phase II Storm Water Permits. A second workshop, entitled "Storm Water Strategies for Technical Professionals" focused on erosion, sediment, and storm water controls and was targeted toward engineers, architects, developers, builders, utility operators, public works personnel, inspectors, and building officials.

In July of 2008, 73 people attended a storm water management workshop in Rankin County that MDEQ helped to sponsor. Training was provided by the International Erosion Control Association and included both classroom and field components with featured talks by a guest panel of regulatory and compliance professionals on subjects such as current regulations, Storm water Pollution Prevention Plans (SWPPPs), construction Best Management Practices (BMPs), inspections, and new BMP technologies.

### **10. Nonpoint Source Pollution Education (NPS) MDEQ Team Workshops**

Two NPS Education teams were formed this year with a workshop meeting being held for each focus topic. The purpose of the first workshop was to bring MDEQ managers together to discuss the seven land use categories of NPS pollution and to list the education programs that address each, as well as to collect information about the control of sediment and erosion from surface mining sites.

The second team focused on the Ross Barnett Reservoir Initiative and included a presentation about the water uses of the Reservoir for drinking water supply, recreation, fish and wildlife, and associated water quality problems.

### **11. *Rocks and Fossils Found in Mississippi's Gravel Deposits***

This booklet completed in April 2008 contains 25 full-color pages of rocks and fossils, a history of Mississippi geology, and an informational article on controlling sediment and erosion from gravel-mining sites. A total of 5,000 books were printed by MDEQ's Nonpoint Source Pollution Program and 500 of those were distrib-



uted at a Mississippi Children’s Educational Fair event to teachers. Booklets may be obtained by contacting the Office of Geology Map Sales Division.

### 12. Citizen’s Guides to Water Quality

These guides are now complete for the Pascagoula River, the Coastal streams Basin, the Tennessee-Tombigbee Rivers, the Pearl River Basin, and the Yazoo River Basin. These documents were created to inform citizens about water resources and the effects of land use on water bodies in the River Basins of Mississippi. These guides are funded by the NPS program and are used to educate the public about the value of Mississippi’s water resources and the concept of watershed management. They specifically include discussions of water quality conditions, land uses, and watershed management activities in the targeted basins. The guides also feature cultural and recreational resources, wildlife, and stewardship opportunities of the River Basins.

### 13. Urban Forestry Manuals and Booklets

Four documents are now available to guide communities in planning and managing urban forests: *Introduction to Urban Community Forestry*; *Urban Forestry, Mississippi Urban and Community Forestry Management Manual(191 pages)*; *The Community Forest Booklet*; and *Preserving Trees in Construction Sites*. These are available from the Mississippi Forestry Commission.

## Basin Management Approach

The mission of the Basin Management Approach is to foster stewardship of Mississippi’s water resources through collaborative watershed planning, education, protection and restoration initiatives. To accomplish this, nine of Mississippi’s major river basins have been organized into four basin groups (see map insert). Each basin group has a basin team of state and federal agencies and local organizations. This team provides the opportunity for multiple levels of government and local stakeholders to coordinate their efforts. Together, basin team members help assess water quality, determine causes and sources of problems, and prioritize watersheds for water quality restoration and protection activities. The Basin Management Approach also encourages and provides the opportunity for basin team members to pool both technical and financial resources to address priority watersheds.



*How can I learn more?*

Contact your Basin Coordinator:

- Group I** North Independent Streams, Tennessee River & Tombigbee River  
Janet Chapman (601) 961-5266 • [janet\\_chapman@deq.state.ms.us](mailto:janet_chapman@deq.state.ms.us)
- Group II** Yazoo River  
Richard Ingram (601) 961-5078 • [richard\\_ingram@deq.state.ms.us](mailto:richard_ingram@deq.state.ms.us)
- Group III** Pearl River, South Independent Streams & Big Black River  
Richard Ingram (601) 961-5078 • [richard\\_ingram@deq.state.ms.us](mailto:richard_ingram@deq.state.ms.us)
- Group IV** Pascagoula River, Coastal Streams & Lower Pearl River  
Richard Ingram (601) 961-5078 • [richard\\_ingram@deq.state.ms.us](mailto:richard_ingram@deq.state.ms.us)

## **enSite - Improving Environmental Information Management**

MDEQ began the development required to participate in EPA's TRI-ME software in 2008. This application will eliminate the need for facilities submitting Toxic Release Inventory data to EPA through TRI-ME to provide MDEQ with a separate copy of this data. MDEQ continues to be a leading state in the National Environmental Information Exchange Network improving data exchanges between environmental partners at the state and federal levels.

### **Electronic Discharge Monitoring Reports (eDMR)**

In 2008, MDEQ announced that any facility having an permit generated in enSite may submit their eDMR electronically. This completed the final phase of eDMR implementation. Any facilities that do not currently have a permit generated through enSite will receive an enSite permit upon renewal or modification of their existing permit.

### **Environmental Resource Center**

#### *Environmental Assistance - A Priority*

The Mississippi Department of Environmental Quality is dedicated to providing statewide focused, collaborative, and coordinated environmental assistance, as a priority, to increase environmental awareness and compliance, and to protect the environment for all Mississippians. MDEQ's assistance vision and ethic incorporates and implements the theme "Environmental Assistance – A Priority." Assistance in the form of workshops, seminars, training sessions, and on-site technical assistance is provided through the Environmental Resource Center (ERC). MDEQ assistance activities are developed and implemented in an agency-wide perspective incorporating input from all MDEQ offices, divisions, programs, and across environmental media.

MDEQ and ERC has provided workshops, seminars, assistance, and training session activities including the following topics and issues: solid waste planning, solid waste enforcement officer training, surface mining laws and regulations, high hazard dam regulations, dam safety, solid and hazardous waste recycling, small business technical assistance, dry cleaner assistance, toxic release inventory training, storm water regulations, pollution prevention, paint spray operations, compliance assistance, coating operations, city and county seminars and conferences, wastewater compliance, basin management, watershed implementation, and water quality.

The ERC continues to provide one on one assistance activities to a variety of Small and Less than Large Businesses.



## Offices Relocated

MDEQ moved into new quarters in Jackson in 2008. The Office of Geology, Office of Land and Water Resources, and some Administrative offices are located at 700 North State Street. The other building, located at 515 East Amite Street, houses the Office of Pollution Control and Executive Offices.



700 North State Street



515 East Amite Street

MDEQ staff appreciates the efforts of Governor Barbour, the Mississippi Legislature, and the Department of Finance and Administration in securing these new buildings.

## enHance

MDEQ launched the new enHance program in 2008. enHance is a voluntary environmental stewardship program that will recognize committed environmental leaders, thus nurturing the reduction of waste and conservation of resources, resulting in long term economic benefits and continuous environmental enhancement. enHance will have three tiers, and interested facilities can apply to be an Associate, Steward, or Leader.



Executive Director Trudy Fisher and Richard Harrell introduce enHance to members of the Mississippi Manufacturers' Association at their Annual Environmental Conference and Expo.

## MDEQ Works The Fishing Rodeo

Fresh seafood is important to the economy of the coast as well as the health and quality of life of many coastal residents. MDEQ and USM's Gulf Coast Research Laboratory for Fisheries Research (GCRL) have been working together to monitor mercury levels in marine and estuarine fish tissue in order to evaluate the health risks associated with eating these fish. The hardest part of this study is collecting the numbers of individual fish needed for each selected species to make the sample size required. Many fish are collected throughout the year through routine monitoring primarily by GCRL, and also by the Department of Marine Resources biologists. However, many of the larger fish and deep water fish are primarily collected at the local fishing rodeos, the largest of which is the Mississippi Deep Sea Fishing Rodeo which takes place around July 4<sup>th</sup> every year. These rodeos welcomed the biologists and let them sample the fish.



## Water Fest 2008

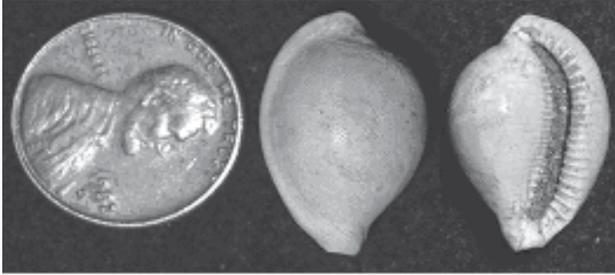
WaterFest 2008 was held June 21, to promote a cleaner Ross Barnett Reservoir. MDEQ partnered with many groups for the event and several staff took part in the festivities. Information is available at [www.rezkeepers.com](http://www.rezkeepers.com).



MDEQ Executive Director Trudy Fisher addresses the crowd at WaterFest 2008.

## On The Road With Fossils

The Fossil Road Show at the Mississippi Museum of Natural Science which aired on Mississippi Public Broadcasting is a take-off on the Antiques Road Show. James Starnes and David Dockery from MDEQ's Office of Geology were two of several specialists who identified rocks and fossils brought in by the public. MDEQ's staff involvement with the Fossil Road Show film led to the identification of two new fossil molluscan species.



A new species of the cowrie shell *Sulcocypraea* found during filming of the Fossil Road Show



New species of a fossil cuttlebone of a *Belosaepia*-like squid from the Moodys Branch Formation

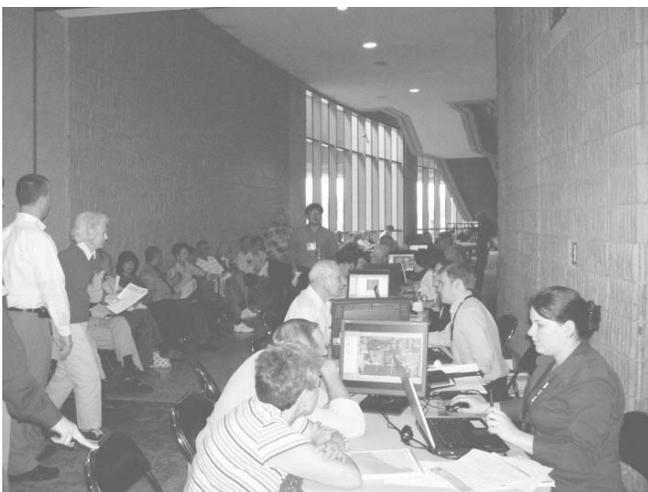
## Mississippi Brownfields Program and EPA exhibit at Mississippi Municipal League Conference

During this summer's annual Mississippi Municipal League (MML) Conference held in Biloxi, local government representatives had an opportunity to sit down with the Mississippi Department of Environmental Quality and the U.S. Environmental Protection Agency to discuss brownfield issues. The "Redevelopment Roundtable" gave participants an opportunity to ask questions about grant and loan opportunities. On hand were Trey Hess, MDEQ Brownfields Coordinator, (left) and Brian Holtzclaw, Region 4 Brownfield Project Manager.



## Countywide "Flood Hazard Open House" Outreach Meetings

During FY2008, the MDEQ Office of Geology and its flood mapping partners, FEMA, MEMA and MGI, LLC (MDEQ contractor), held countywide "Flood Hazard Open House" outreach meetings in eight Mississippi counties that had newly released preliminary Digital Flood Insurance Rate Maps (DFIRMs). This included the three coastal counties, Hancock, Harrison and Jackson, where 859 members of the public attended the three days of meetings in mid-December, 2007. Homeowners could look up their property location, obtain current effective Base Flood Elevation (BFE) information to compare to the revised BFEs on the new preliminary DFIRMs, and ask questions about FEMA flood insurance. Over 1,500 properties were checked at the three coastal countywide meetings.



Members of the public viewing new digital flood maps at the Harrison County "Flood Hazard Open House" outreach meeting held in December 2007, at the Mississippi Gulf Coast Coliseum in Biloxi, Mississippi.

## Renewable Energy Day



Jerry Beasley and Keith Head of the Air Division spoke to students at their station during the Renewable Energy Day event on October 3, at the Mississippi Agriculture and Forestry Museum.

## Mississippi Children's Educational Fair

MDEQ partnered with the Junior League of Jackson for the Mississippi Children's Educational Fair in April. Staff made presentations and helped students "mine" for stones in a large gravel pile. More than 3,000 students participated.



## AWARDS

### Mississippi Flood Map Modernization Initiative Receives Award for Excellence

The Mississippi Flood Map Modernization Initiative received the Tom Lee State Award for Excellence from the Association of State Floodplain Managers at their annual meeting in Reno, Nevada. Mississippi was recognized for its work prior to and after Hurricane Katrina in the Coastal Counties. The Mississippi Flood Map Modernization Initiative is a joint effort between MDEQ and MEMA who are partnered with FEMA in the updating of 80 of Mississippi's counties and the conversion of the old Flood Insurance Rate Maps (FIRMs) to the new countywide Digital Flood Insurance Rate Maps (DFIRMs). All 82 Mississippi counties will have the new DFIRMs completed by the end of 2010. MDEQ's part in the process is the management of the actual engineering and production of the new DFIRMs by MDEQ contractors.



Steve Champlin (second from right) accepts the award for Mississippi

## **MDEQ Receives Environmental Education Award**

The Mississippi Environmental Education Alliance (MEEA) honored MDEQ with the “2008 Organization Award for Outstanding Service to Environmental Education.” MDEQ was recognized for leadership and sponsorship of environmental education programs which are active throughout Mississippi.



Laura Beiser (second from right) accepted the award on behalf of MDEQ.

## **Region IV Small Business Environmental Assistance Programs Award**



Randy Wolfe (third from left) accepts award for EPA Region IV.

Randy Wolfe accepted an award on behalf of EPA Region IV’s Small Business Environmental Assistance Programs in Washington, D.C. Randy was selected to represent Region IV on the Small Business Environmental Assistance Programs National Steering Committee and also serves as the regional coordinator for these activities.

## **MDEQ Emergency Services Receives Award of Appreciation for Outstanding Service**

In 2008, the Emergency Services staff received an Award of Appreciation for outstanding service from the Mississippi Civil Defense/Emergency Management Association. Executive Director Trudy Fisher, Chief of Emergency Services Eric Dear, and Jerry Cain of the Office of Pollution Control accepted the award on behalf of MDEQ at the organization’s conference in Natchez.

MCDEMA is an association of local and state emergency managers and emergency response personnel who work to address emergency management issues in Mississippi.



## MDEQ Responds to Hurricane Gustav

During any type of disaster, the Mississippi Department of Environmental Quality's role is to protect the public health of Mississippi citizens and the state's environment.

The approach of Hurricane Gustav prompted MDEQ staff into its role manning the assigned desk at the Mississippi Emergency Management Agency (MEMA). As part of the Emergency Operations Center (EOC), MDEQ responds to environmental emergencies and questions. MDEQ staff work with federal, state and local response agencies to recover



hazardous materials that become displaced or may cause harm to people or the state's air, land or water. Prior to the storm, MDEQ contacted industry for up-to-date contact information and to offer assistance. Industry was also reminded to take certain precautions such as securing tanks, drums and other materials that can become displaced during a storm.

One of MDEQ's primary roles under the state's Comprehensive Emergency Management Plan during a disaster is that of Hazardous Materials Response. MEMA divides activities into different Emergency Support Functions (ESF). Hazardous Materials fall under ESF 10. During a disaster MDEQ, possibly in conjunction with EPA, will respond to reports of hazardous material spills or releases and assess affected areas for unreported releases.

MDEQ also has many additional support roles under the Emergency Support Function system. MDEQ has major support roles in ESF 3 – Public Works and Engineering and ESF 11 – Animals, Agriculture and Natural Resources. Under ESF 3, MDEQ aids in the proper handling and disposal of solid waste debris and assessments and recovery of wastewater and drinking water infrastructure.



Executive Director Trudy Fisher assessed the damage from Hurricane Gustav with Governor and Mrs. Haley Barbour.