



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.

Mississippi Department of Environmental Quality

Environmental News

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MARION COUNTY HHW EVENT

MDEQ, along with Marion County and the City of Columbia, hosted a Household Hazardous Waste (HHW) collection event on January 9 and 10 to collect storm damaged items. Large appliances and electronic wastes were collected in addition to household chemicals. A major concern after natural disasters is the collection and disposal of all types of waste, and MDEQ staff work with recovering communities to resolve the solid waste issues they face.

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MISSISSIPPI IN ATTAINMENT FOR ANNUAL AVERAGE PM_{2.5} NAAQS DESIGNATIONS



Air monitor in Waveland.

In December 2014, the U.S. Environmental Protection Agency (EPA) notified Governor Phil Bryant that all of Mississippi's counties were designated as in attainment for the current PM_{2.5} standard based upon 2011-2013 air quality monitoring data. EPA lowered the National Ambient Air Quality Standard (NAAQS) for Annual Average fine particulate matter (PM_{2.5}) from 15 Micrograms per Cubic Meter of Air ($\mu\text{g}/\text{m}^3$) to 12 $\mu\text{g}/\text{m}^3$ in January of 2013.

The size of PM_{2.5} particles is less than 2.5 micrometers in diameter, and sources of PM_{2.5} include diesel engines, road dust, fires, other combustion sources, and industrial processes. These particles can get deep into the lungs and may even get into the bloodstream, and chronic exposure to elevated PM_{2.5} concentrations can cause lung and heart problems. In Mississippi, elevated PM_{2.5} concentrations rarely occur and the state is easily meeting the PM_{2.5} air quality standards.

As a result of data validity issues, EPA is deferring PM_{2.5} designations for the following ten areas in the Southeast: eight areas in Georgia, which also include single counties in South Carolina and Alabama; the entire state of Tennessee, except three counties in the Chattanooga area; and the entire State of Florida. Mississippi did not have these data validity issues due to the accurate, complete, and trusted monitoring data produced by the joint efforts of MDEQ staff at the North Regional Office, the Central Regional Office, the South Regional Office, the MDEQ Field Services Laboratory, and the Air Division.

If you have any questions or need more information, please contact Jerry Beasley at jbeasley@deq.state.ms.us or at (601) 961-5134.

TASK FORCE HOSTS WATER CONSERVATION SUMMIT

The Governor's Delta Sustainable Water Resources Task Force hosted an Irrigation and Water Conservation Summit in Stoneville on December 10. Sessions included topics such as Economics of Irrigation, Conservation and Water Availability, Use of Meters as a Conservation Tool, Pump Performance to Increase Irrigation Efficiency, and Maximizing Furrow Irrigation Efficiency in Corn, Cotton and Soybeans. Access to the presentations is available at:

www.deltacouncil.org.

Top: MDEQ Chief of Staff Chris Wells addresses the opening session.

Bottom: L—R: Dr. Jason Krutz, MSU Irrigation Specialist, MDEQ's Paul Parrish, and Kay Whittington, Director of MDEQ's Office of Land and Water Resources.





STAFF CHANGE

Chris Hawkins was recently named Chief of the Permitting, Certification, and Compliance Division in the Office of Land and Water Resources by the Office's Director, Kay Whittington. This division issues and renews all groundwater and surface water withdrawals for drinking water, irrigation, fish culture, and other uses. It oversees the licensing and renewal of all water well drillers and enforces the laws and regulations associated with drilling. The division is also charged with protecting all public drinking water supplies both surface and sub-surface through the Source Water Assessment Program.

"The abundant water supplies in Mississippi constitute one of the most important and valuable natural resources in the state. These resources contribute directly to the quality of life and economic prosperity of the state. I am excited to have Chris on board to oversee the protection and development of our water resources in the best interest and welfare of the citizens of the state," said Kay Whittington.

"I enjoy serving the State of Mississippi and feel that working for MDEQ is rewarding in the fact that I am helping to create a better life and environment for future generations. I am excited to begin the next chapter of my career here at MDEQ and look forward to the new challenges associated with being the Chief of the Permitting, Certification, and Compliance Division," added Hawkins.

Previous to assuming this position Chris worked for 15 years in MDEQ's Groundwater Assessment and Remediation Division as a project manager overseeing the assessment and remediation of contaminated Brownfields, Uncontrolled, and Voluntary Evaluation Program sites. He earned a bachelors degree in Biological Engineering from Mississippi State University in 1998 and is a registered Professional Engineer.

E3 TRAINING AT TOYOTA MANUFACTURING MISSISSIPPI



Toyota Motor Manufacturing Mississippi, a Leader in MDEQ's Enhance program, recently sponsored an E3 training event for Mississippi industries.

Principles of E3, Economy, Energy, and Environment, were covered through classroom presentations and a facility visit. Toyota showcased their unique environmental management system, presented a case study of a Kaizen activity, demonstrated hazardous waste management techniques, and reviewed energy auditing strategies. Associated benefits of each were discussed. The facility visit provided an opportunity to see first-hand how Toyota has applied these techniques in their everyday operations. Many thanks to Toyota for demonstrating environmental leadership!



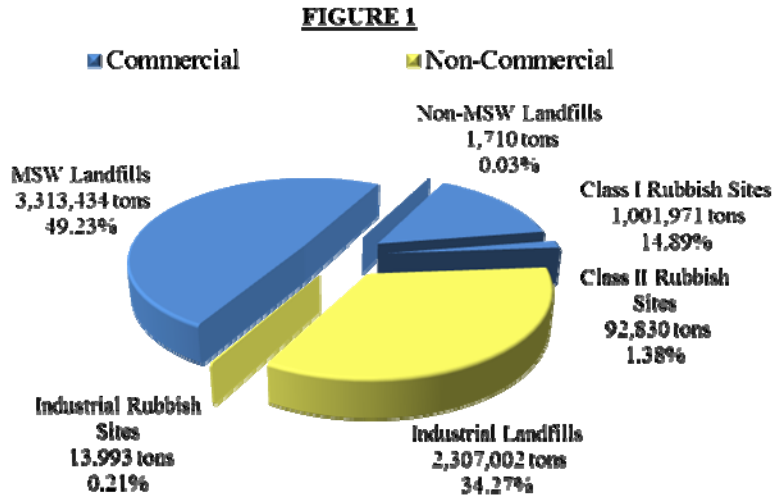
MDEQ RELEASES 2013 ANNUAL STATE SOLID WASTE REPORT

MDEQ recently released the 2013 Status Report on Solid Waste Management Facilities and Activities. The annual status report is developed by MDEQ to summarize and provide information on solid waste management and disposal activities that were conducted in Mississippi each calendar year.

The report is based on information provided to MDEQ by individual facility owners as required by state law, applicable regulations, and/or the facility operating permits. The status report includes summary information for these solid waste management facilities and activities:

- Municipal Solid Waste Landfills
- Non-Municipal Solid Waste Landfills
- Class I and Class II Rubbish Sites
- Industrial and Institutional Landfills
- Industrial and Institutional Rubbish Sites
- Transfer Stations
- Land Application Sites
- Processing Facilities
- Composting Facilities
- Beneficial Use of Nonhazardous Solid Waste and/or By-Products
- Waste Tire Management

The 2013 report indicates that just over 6.7 million tons of solid waste was received for disposal at commercial and non-commercial landfills and rubbish sites (Figure 1). This total tonnage represents an approximately 300,000 ton increase in total nonhazardous solid waste disposal in Mississippi in 2013 as compared to 2012.



The 2013 annual report also indicates that other solid waste management facilities managed solid wastes as follows:

| FACILITY | TOTAL TONS MANAGED |
|------------------------|--------------------|
| Transfer Stations | 716,665 |
| Land Application Sites | 58,015 |
| Processing Facilities | 126,433 |
| Composting Facilities | 22,258 |

Additionally, over 850,000 tons of industrial and other solid waste by-products were distributed during 2013 for legitimate end uses through the MDEQ Beneficial Use program. Finally, the report shows that over 5.7 million passenger tire equivalents were managed in Mississippi in 2013, and approximately 88 percent of the waste tires were recycled.

The solid waste information provided in the full report may be utilized by local government officials and solid waste decision makers, disposal facility owners and operators, state agencies, and other organizations and individuals, and an electronic version of the report is posted on the Solid Waste Facility Reporting Program webpage. Please visit the MDEQ Solid Waste Program webpage (www.deq.state.ms.us/solidwaste) or contact Trent Jones at trent_jones@deq.state.ms.us or (601) 961-5171 for additional information.

SOLID WASTE MANAGEMENT FACILITY ANNUAL REPORTING DUE

The Solid Waste Management Program at MDEQ is reminding the owners and/or operators of all solid waste management facilities that an annual report on the solid waste management or disposal activities conducted during Calendar Year 2014 is due to the agency no later than February 28, 2015. These reporting requirements apply to landfills, rubbish sites, transfer stations, land application sites, processing facilities, composting facilities, and also to beneficial use determinations. The annual report is required pursuant to Mississippi Code Annotated §17-17-219, the Mississippi Nonhazardous Solid Waste Management Regulations, and/or the specific requirements of the solid waste facility operating permit.

Owners and operators may access facility specific reporting notifications and forms online at www.deq.state.ms.us/solidwaste. To access the forms, click on “Solid Waste Reporting” on the left hand side of the page. Otherwise, hard copies of these forms will be mailed to all facility owners and operators in January. Operators are asked to submit two copies of the completed Annual Reporting Form and the supporting information. Forms should be completed and submitted for all solid waste facilities with a valid solid waste management permit or authorization, even if the facility was inactive during the calendar year. Any questions can be directed to Trent Jones at 601-961-5726 or trent_jones@deq.state.ms.us.

RANKIN COUNTY SCHOOLS RECEIVE ENERGY STAR RATING

In December, 21 Rankin County Schools were recognized for being labeled as Energy Star efficient. MDEQ’s Dallas Baker and Khairy Abu-Salah were present as was Nissan’s Brett Rasmussen who assisted the district.



ANNUAL REPORTING REQUIREMENTS

Many environmental permits require permit holders to submit annual compliance reports to MDEQ. Some examples include the annual reports required of solid waste management facilities, annual reports required by Baseline Industrial storm water permits, and the Annual Certificate of Compliance (ACC) required by Clean Air Act permits.

These reports serve a pivotal role in MDEQ's regulatory efforts, and failure to submit a timely, complete, and accurate annual report constitutes a violation of the applicable permits and the underlying environmental laws. Such violations are subject to enforcement by MDEQ, which can include the assessment of penalties, and any penalties assessed for an untimely report are in addition to any penalties which may be associated with an inaccurate report or underlying violations noted in the report.

Unlike other report submittals, it is important to note that ACC's must be submitted both to MDEQ and the Environmental Protection Agency (EPA). Failure to submit a timely, complete, and accurate ACC is subject to independent enforcement by EPA. EPA closely monitors timely submittal of ACC's and has demonstrated their interest in the past by initiating enforcement with permit holders failing to comply with reporting requirements.

Efficiently transmitting the reports is often as important as the information contained within. To demonstrate timely submittal(s), retain proof of delivery and receipt of reports sent to MDEQ and EPA. Clearly identify the submittals, include the appropriate permit number, and reference the permit conditions it is meant to satisfy. Staples are preferred to paperclips since most submittals are date stamped in the MDEQ mailroom. Finally, reports required under different permits should be submitted under separate cover letters. Following these steps facilitates the routing of these submittals to the appropriate individuals for review and minimizes misplaced submittals.

For questions or more information, contact Chris Sanders, Environmental Compliance and Enforcement Division, at 601-961-5171.

MDEQ WASTE TIRE ABATEMENT PROGRAM UPDATE

MDEQ's Solid Waste Management Program recently completed the clean-up of a number of indiscriminate waste tire piles in the state through the agency's Waste Tire Abatement program. MDEQ originally identified the four potential waste tire stockpiles through citizen complaints filed with the agency in Alcorn and Prentiss counties. These waste tire stockpiles were contributing to a variety of local nuisance conditions by providing a habitat for mosquitoes and other vectors, causing potential fire hazards, and inviting additional illegal dumping activities. After attempts were made to have the sites cleaned up by responsible parties, MDEQ identified the sites as eligible abatement projects and the sites were cleaned up in phases from August through December 2014. An approved MDEQ contractor removed a total of 832 tons of waste tires, which is the equivalent of almost 74,000 passenger-sized automobile tires. The majority of the tires removed in the abatement project were processed into chips to be used as an alternative fuel in industrial boilers.



Before



After

The Mississippi Waste Tire Abatement Program was established through the state's Waste Tire Law adopted by the Mississippi State Legislature in 1991. The program provides a mechanism for the Commission on Environmental Quality to conduct clean-ups of historic waste tire stockpiles and illegal tire dumps. Since its inception, the program has successfully removed more than 2.5 million scrap tires from more than 80 sites at a cost of about \$2.5 million. Funding for these clean-up projects comes from a portion of the \$1.00 per tire fee paid on the purchase of each new tire.

The Abatement Program is an important part of the overall Mississippi Waste Tire Management Program which also administers the regulatory provisions of the tire law and provides funding assistance programs to help manage the estimated three million waste tires generated in Mississippi each year. The ultimate goal of the program is to promote the recovery and recycling of the waste tires. Today, Mississippi waste tire processing companies manage some 5.7 million passenger tire equivalents (approximately 50 percent originate from out-of-state) and recycle approximately 94 percent of those tires.

For more information, please visit the program website at: www.deq.state.ms.us/wastetire or contact MDEQ at 601-961-5171.

MDEQ TO HOST RUBBISH SITE OPERATOR TRAINING IN FEBRUARY

MDEQ is hosting the Mississippi training course for Class I rubbish site operators on Wednesday, February 25 and Thursday, February 26, at the Cabot Lodge – Millsaps on North State Street in Jackson. The course offers an opportunity to fulfill state training and testing requirements for the Class I Rubbish Site Operator Certification and to update general knowledge of Class I rubbish site regulatory and operational requirements. MDEQ will also allow currently certified operators to attend the course as a refresher course for Continuing Education Units (CEUs). The course is a day and a half class with a written examination on the second day. Attendees who pass the written examination and meet the experience and education requirements may apply to MDEQ for a certificate of competency for a Class I rubbish site operator. The examination will not be required for those operators attending for CEUs only. All attendees that complete the class will receive 10 hours of CEUs that can be applied towards renewal of their certification. There is no registration cost for the training; however, all lodging, meal and transportation costs are the responsibility of the attendees.

Course instructors will include the staff of MDEQ and FTN Associates, Ltd. Advance registration for the course is required. For additional information on the training course and details about registration, contact Mark Williams with MDEQ at 601-961-5304 or visit the MDEQ solid waste program web page at: www.deq.state.ms.us/solidwaste.



PESTICIDE DISPOSAL EVENT SCHEDULED FOR JAN 29 IN GREENWOOD

Mississippi farmers with waste agricultural pesticides are invited to take part in a waste pesticide disposal event on Thursday, January 29, from 8:00 a.m. to 3:00 p.m. in the parking lot of the Leflore County Civic Center located at 200 Highway 7 North in Greenwood.

The one-time event offers farmers a no-cost, environmentally safe way to dispose of leftover pesticide products through a licensed contractor. Agricultural waste products and up to ten automobile/light truck sized tires and up to two tractor-sized tires will also be accepted for recycling. Additional tires over this limit can be taken to the local county drop-off site.

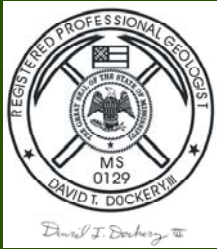
Waste pesticides include leftover, cancelled, or otherwise unusable products such as insecticides, herbicides, fungicides, and plant growth regulators. No rinsates or pesticides in bulk containers will be collected. There is no charge to Mississippi farmers, but they are responsible for safely transporting waste pesticides and tires to the collection site.

A licensed hazardous waste contractor will be on hand at the collection site and will collect, analyze, and dispose of the products according to environmental laws.

The program is coordinated by the Mississippi State University Extension Service with funds made available through the Mississippi Department of Environmental Quality and the Mississippi Department of Agriculture and Commerce. For more information please contact Mary Love Tagert at mltagert@abe.msstate.edu.

Photo from a similar event in 2014.





GEOLOGIC MAPPING AND LIGNITE RESOURCES

David T. Dockery III, RPG, and David E. Thompson, RPG, Office of Geology

Mississippi lignite deposits were recognized as an important resource early in the state's history. Lignite seams were mentioned in the earliest books on the state's geology, including Wailes (1854), Harper (1857), Hilgard (1860), and Crider (1906). It was also the subject matter of Bulletin 3 of the Mississippi Geological Survey by Calvin S. Brown in 1907 entitled *The Lignite of Mississippi*. In 1973, the Mississippi Geological Survey (MGS) was supported in part by a grant from the Mississippi Research and Development Center to investigate Mississippi's lignite resources. MGS geologist David Williamson vacated his work on the geology of Clarke County to lead the lignite investigation. The results of this work, which included many core-hole records of lignite occurrence, were published as Information Series MGS-74-1 (Williamson, 1976) under the title *An Investigation of the Tertiary Lignites of Mississippi*. Demand for this publication was high, and the book quickly sold out. Figure 1 is a map of statewide lignite prospect regions, which was developed through a combination of state and private industry drilling activity.

In 1989, a revision of geologic mapping was underway in the early Tertiary Midway and Wilcox Groups of Mississippi, a geologic section that is notable for its lignite occurrences. In fact, Wilcox Group was named the Lignitic Stage by Harris (1903) for the common occurrence of lignite seams. The stratigraphic revisions utilized for this geologic section discontinued the antiquated provincial stratigraphic formations used in Mississippi in favor of the classic Alabama stratigraphy of the type Midway and Wilcox sections. Figure 2 illustrates how geologic formations in the Midway-Wilcox section had differing naming schemes along either side of the Alabama-Mississippi state line. An open-file report in 1982 by U.S. Geological Survey geologists reported that a lignite seam in the Naheola Formation of the Midway Group in Alabama was the same lignite seam that was found in the Fearn Springs Formation of the Wilcox Group in Mississippi. This miscorrelation created an artificial state-line fault, and clouded proper stratigraphic correlations across the region (Figure 2).

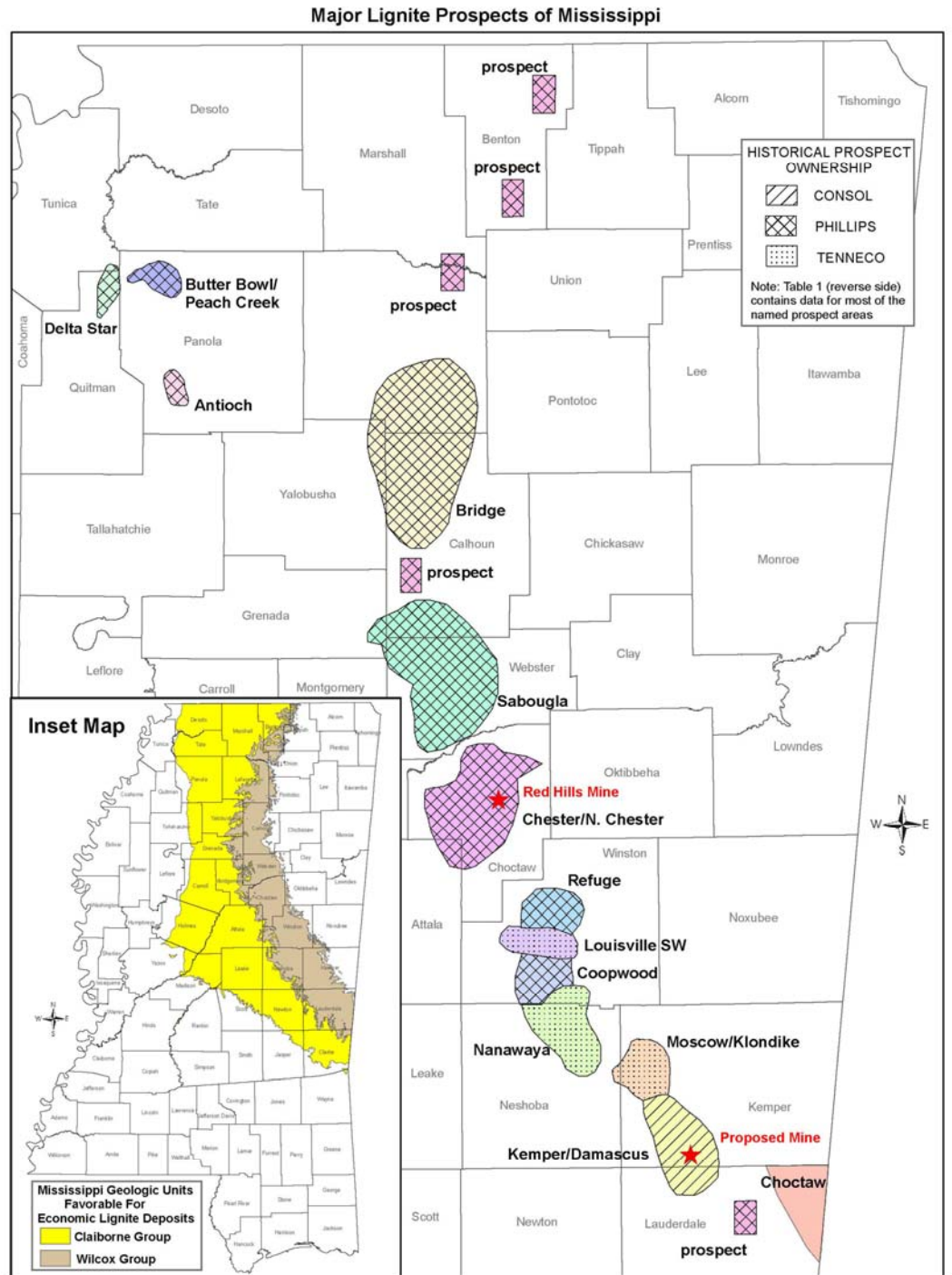


Figure 1.

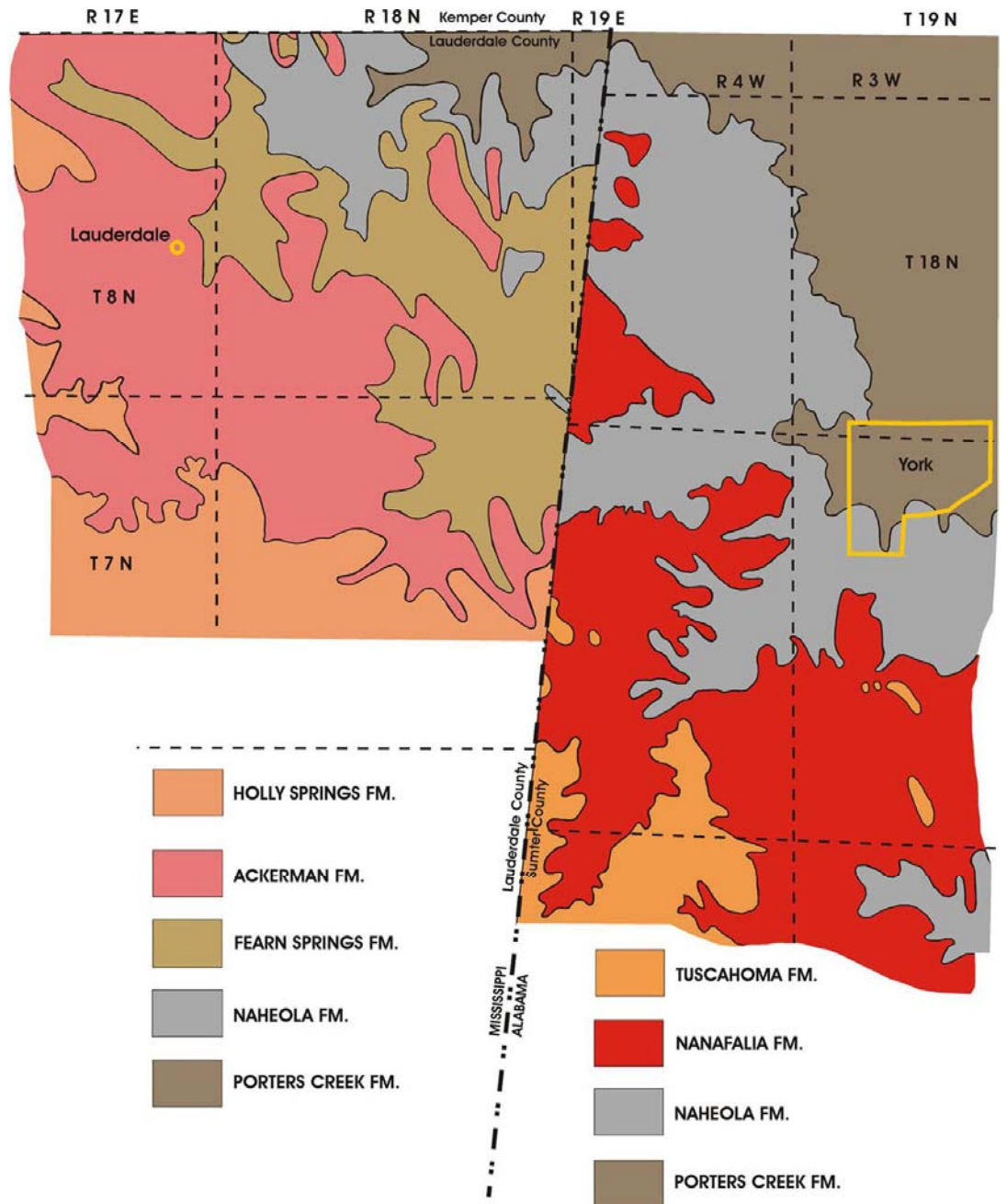


Figure 2. Right, geologic map of Sumter County, Alabama. Left, geologic map of Lauderdale County, Mississippi, published in 1940.

The first state and federal cooperative geologic mapping agreement under the U.S. Geological Survey COGEOMAP grant was to remap the Naheola Formation (of the Midway Group) in Mississippi. This formation was selected for detailed mapping based on its mineral resources (lignite, iron ore, bauxite, ceramic clay, heavy minerals, and groundwater recharge implications) and the premise that it was incorrectly mapped on the state geologic map. Phillip Weathersby and Wayne Stover (both still employed by MDEQ) were given the difficult task of mapping this formation in the field. Dr. Ernie Russell of Mississippi State University's Geology Department made many trips to the field to assist with this mapping effort. Phillip and Wayne would later find themselves coring commercial clay deposits in the Midway-Wilcox groups with funding from the Millsaps College Geology Department (Figure 3).



Figure 3. From left to right, Bill Gilliland, David Dockery, Wayne Stover, and Phillip Weathersby at coring site to sample commercial ceramic clay in the Naheola Formation. Picture was taken in April of 1990.

In 1996 under the U.S. Geological Survey STATEMAP grant, David Thompson and George Puckett mapped the Midway and Wilcox groups in the DeKalb Quadrangle in Kemper County. David Thompson continued this effort, quadrangle by quadrangle, across northeastern Mississippi from the Alabama to the Tennessee state line.

Several hundred lignite test-hole geophysical logs were provided by North American Coal Corporation and were important aids in maintaining stratigraphic control. Equivalent lignite seams were correlated over substantial distances, and the base of the J seam of the lower Tuscahoma Formation was included on certain geologic quadrangle maps as a dashed line. Early quadrangle mapping in the STATEMAP 1996 grant included the Tomnolen (Open-File Report OF-54) and Reform (OF-55) quadrangles, quadrangles important to Mississippi's energy development in the Chester Lignite Prospect.

Several years ago former MDEQ director Charles Chisolm gave department supervisors a memorable talk on Stephen Covey's (author of the bestseller *The 7 Habits of Highly Effective People*) quadrant matrix, which exhibited how people typically spent time at work. Chisolm suggested that we spent too much time in Quadrant I, reacting to crises, pressing problems, and deadlines. Quadrants III and IV were filled with unnecessary reports, trivial busy-work, and irrelevant phone calls and emails. Rather, Chisolm said that we should be working in Quadrant II, a quadrant of preparation, prevention, and planning. Those who worked in Quadrant II spent less time in Quadrant I because they were prepared for crisis moments. While MDEQ's Office of Geology was mapping the most difficult geology in the state because it had important resources and needed revision, we were also fortuitously mapping Mississippi's energy future. After a hundred and fifty years of lignite research by the Mississippi Geological Survey/MDEQ Office of Geology, the development of the initial box-cut of the Red Hills Lignite Mine began in April of 1999. The mine's footprint was within the Tomnolen and Reform quadrangles. The geology section of the mine's permit adopted David Thompson's stratigraphic correlation of lignite seams and recently-completed surface geology (Figure 4).



Figure 4. Lignite seams in the Red Hills Lignite Mine as pointed to by James Starnes. Picture was taken on September 29, 2014.

When the Liberty Lignite Mine in Kemper County began operation, we were prepared for that as well. Figure 5 shows the location of the Red Hills and Liberty lignite mines on a composite of geological quadrangle maps. Figure 6 shows the stratigraphy of the lignite seams associated with both lignite mining operations. Today lignite from the ten-foot-thick J seam of the Liberty Lignite Mine is being mined and stockpiled (Figure 7) at the Kemper County Power Generation Plant, near completion. The 5.6-billion-dollar plant includes new clean-coal technology that will transform lignite into synthesis gas as a cleaner fuel for power generation. Sulfur in the lignite will be converted into marketable sulfuric acid. Nitrates in the coal will be converted into marketable nitrate fertilizer, and the carbon dioxide will be sold to Denbury Resources in the company's tertiary oil recovery efforts at Heidelberg Field, a recovery projected to produce 44 million barrels of oil.

Old geologic mapping located lignite mining regions on a thick, undifferentiated sequence of sediments.

New detailed mapping places lignite mining regions in discrete geologic units and allows for recognition of additional deposits.

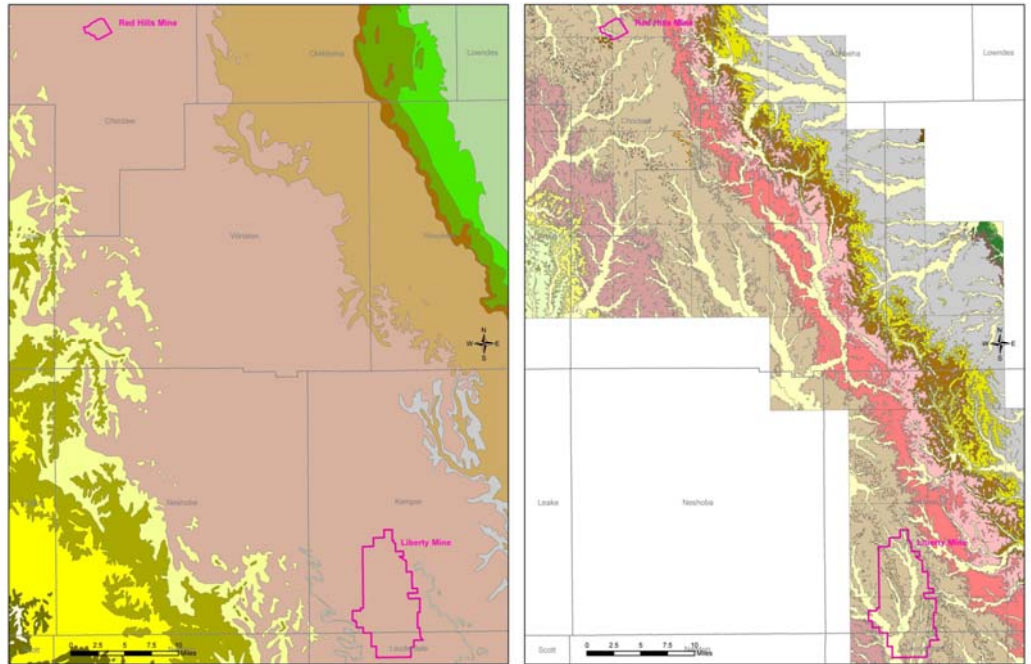


Figure 5. Left, the 1969 Geologic Map of Mississippi at a scale of 1:500,000, with mine sites shown. Right, recent detailed 7.5-minute quadrangle geologic maps at a scale of 1:24,000, showing mine sites.

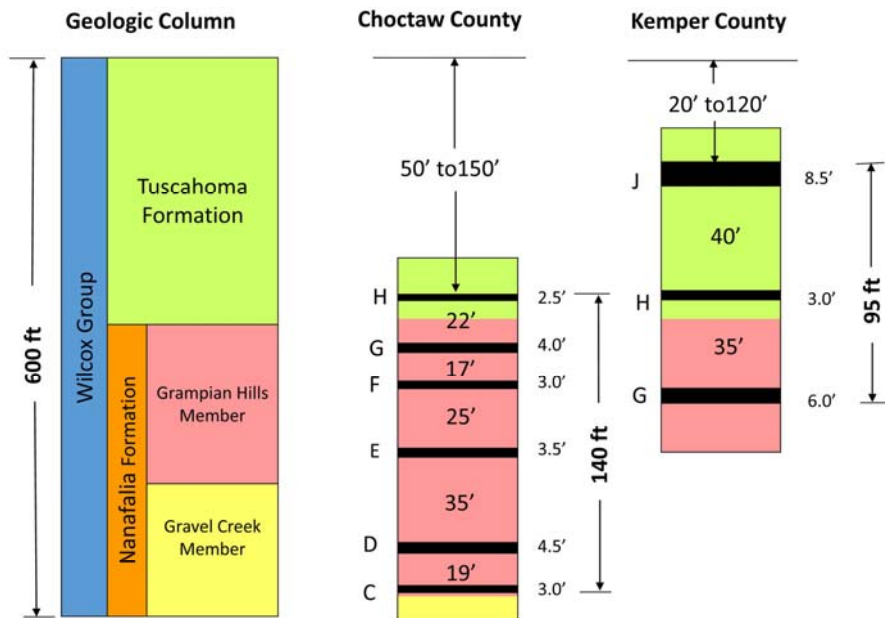


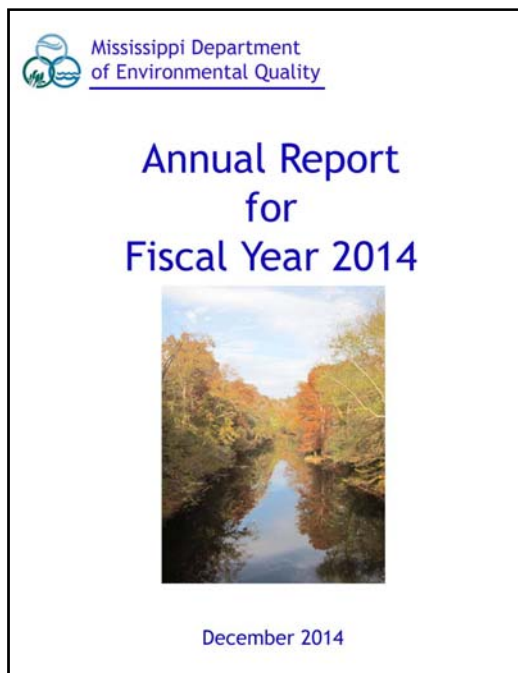
Figure 6. North American Coal Corporation's correlation of lignite seams between the Choctaw and Kemper County lignite mines based on MDEQ's geologic maps.



Figure 7. Covered conveyer belt and storage dome for lignite at the Kemper County mine and power plant. Picture was taken on September 30, 2014.

MDEQ 2014 ANNUAL REPORT AVAILABLE

The agency's annual report for 2014 is available on its website using this link: <http://bit.ly/13Tt2Yf>.



MDEQ ENVIRONMENTAL ACTION LINKS



- Draft permits currently at public notice, <http://opc.deq.state.ms.us/publicnotice.aspx>.
- Permits and certificates issued in the last 90 days, http://opc.deq.state.ms.us/report_permits.aspx.
- General permit coverages issued in the last 90 days, http://opc.deq.state.ms.us/report_gnp_issued.aspx.
- Notices of Intent for coverage under a Statewide General permit received by the Environmental Permits Division, http://opc.deq.state.ms.us/report_gnp_notice.aspx.
- List of the 401 Water Quality Certifications currently at public notice, http://opc.deq.state.ms.us/report_wqc_public_notice.aspx.
- List of the compliance inspections recently conducted, http://opc.deq.state.ms.us/report_eced_tasks.aspx.
- Orders issued by the Mississippi Commission on Environmental Quality, http://opc.deq.state.ms.us/report_orders.aspx.

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PICTURE OF THE MONTH

Wild Thistle blooming
along Highway 61 in
Jefferson County.

Taken by James Starnes,
Office of Geology.

