



Air and Waste Matters

DNREC Division of Air and Waste Management

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Yard Waste Land-filling Ends/Recycling Expands

On January 1, 2007, Delaware took the first step toward ending the wasteful practice of land-filling yard waste, at least in northern New Castle County. Many are happy to see that the First State is catching up with long-standing statewide bans in Maryland, Pennsylvania and New Jersey, as well as 23 other states and many more cities and counties that ban yard waste from landfills.

DNREC has worked closely with haulers, the Delaware Solid Waste Authority, local communities, state legislators and small businesses to maximize the options for residents to allow them the cheapest and easiest options for handling yard waste. The most common option – a community mulch site where residents can drop off yard waste and pick up mulch, at no direct cost to them – is

being developed as a pilot project by DNREC in cooperation with New Castle County Conservation District and DelDOT. In addition, most private haulers now offer a yard waste pickup service, with costs from \$0 to \$12/month. Homeowners should shop around for the best price.

Despite some initial concerns, diversion of yard waste from the landfill is well on its way to success. With enactment of the recycling legislation, funding support could be provided to local governments and communities to establish yard waste mulch sites and other recycling opportunities. For more information on options for handling yard waste, please call Jim Short or Debra Nielsen at (302) 739-9403, or visit:

<http://www.dnrec.delaware.gov/yardwaste/Default.htm>.

Delaware City Refinery's New Wet Gas Scrubber

The second of two wet gas scrubbers mandated in a consent decree to produce major reductions of sulfur dioxide emissions at the Valero refinery in Delaware City began operating on December 17, 2006. Operation of the second scrubber with the fluid catalytic cracking unit's carbon monoxide boiler will mark the culmination of a major pollution reduction project at the refinery.

The project includes air pollution controls on two major sources – the cracking unit and fluid coker unit, which was installed with the first wet gas scrubber in September. The resulting reductions in sulfur dioxide from these two sources at the plant are expected to be more than 99 percent, or more than 37,600 tons annually from past permitted



levels. The refinery may also realize reductions of over 900 tons annually of other pollutants from all aspects of the pollution con-

(Continued on page 2)

Delaware City Refinery's New Wet Gas Scrubber...

trol upgrade project. Overall, air pollution from the refinery was reduced by more than two-thirds, or over 60%, as a result of these two scrubbers.

The Valero Refinery produces gasoline and other products from sour crude oil containing high concentrations of sulfur. Sulfur dioxide is a serious respiratory irritant that can cause breathing problems, respiratory illness, and aggravate existing cardiovascular disease. Children, the elderly, and people with asthma, cardiovascular disease or chronic lung disease, such as bronchitis or emphysema, are more susceptible.

The Division's Air Quality Management Section regulates emissions of air contaminants through construction and operating permits for industrial facilities, inspects air contamination sources, monitors air quality, and maintains emissions inventories for business and industry. For more information on the new scrubber activities at the Valero Refinery, please visit:

<http://www.awm.delaware.gov/Scrubber.htm>.

—Article by Bruce Steltzer and Ravi Rangan, AQM

Mission Possible — Preventing Industrial Chemical Disasters

In 1984, a release of methyl isocyanate (MIC) at a Union Carbide plant in Bhopal, India, killed over 2,000 people outright and injured over 150,000 more, some of which later died of their injuries. The investigation into the release revealed that Union Carbide let many of the plant's safety systems fall into neglect prior to the incident, endangering not only plant workers, but the surrounding community.

Although the need to enact legislation to prevent large-scale releases of hazardous substances from working facilities had been identified under the Carter administration, public outcry over the Bhopal incident provided the tipping point for states and the federal government to enact it. Delaware enacted its Extremely Hazardous Substances Risk Management Act in 1988.



Richard Antoff and Jay Brabson

Delaware's Act required DNREC to develop a regulation to prevent chemical accidents. The original regulation became effective September 1989. Today, we know this regulation as the Accidental Release Prevention Regulation (ARP Regulation). Although the federal government called for similar federal regulations in the 1990 amendments to the Clean Air Act, federal regulations were not issued until 1996 and industrial compliance was not required until 1999, a full 10 years after Delaware had its program up and running.

Delaware's ARP Program is run by two chemical engineers with 64 years of combined experience. Jay Brabson has 11 years of experience with the ARP Program and 21 years of industrial experience, and Richard Antoff has 15 years of experience with ARP and 17 with industry. The ARP group inspects industry to determine whether a facility complies with the elements of the risk management program. This determination hinges around compliance with "Generally Accepted Good Engineering Practices," and compliance with applicable industry standards and codes. The program elements are "performance" oriented (facilities have the latitude of determining the best methods for their organization to comply with regulatory requirements), rather than "prescriptive" (where the regulation dictates exactly how to comply).

The ARP group also works closely with emergency planners and other community stakeholders to ensure understanding of the hazards. The group also "raises the compliance bar" higher for industry to ensure continuous improvement of their chemical safety programs.

—Article by Richard Antoff, ARP

SPOTLIGHT ON:

DNREC's Accidental Release Prevention Regulation

DNREC used a stakeholder committee to help write both the legislation and the regulation. This committee consisted of state agencies (DNREC, the Department of Public Safety, the Department of Health and Social Services, and the State Fire Marshal's Office), local agencies (e.g., New Castle County Department of Safety and Emergency Response), environmentalists, legislators, and industry experts. Delaware became the third state to enact this type of regulation.

The regulation went beyond volatile toxic chemicals to include flammable gases (which can form vapor cloud explosions) and self-reacting substances (which can detonate). However, the regulation does not forbid the use of these extremely hazardous substances. Rather, it requires the use of risk management programs to reduce the risk that these chemicals escape confinement, endangering the surrounding communities.

The elements of the risk management program are:

- Process Safety Information
- Process Hazard Analysis
- Operating Procedures
- Training
- Mechanical Integrity
- Management of Change
- Pre-startup Safety Review
- Compliance Audits
- Incident Investigation
- Employee Participation
- Hot Work Permit
- Emergency Response



This 1994 release of chlorine gas in Delaware City was the last major release from an ARP-regulated process in DE.

In addition, the facility must use a management system to oversee the implementation and integration of these elements into their day-to-day operations and they must submit a risk management plan (RMP).

The RMP summarizes the facility's risk management program, provides basic information concerning the facility and the regulated process, and includes a five-year accident history and a consequence assessment that predicts the "worst case scenario" for the release of the hazardous substance.

For more information on DNREC's ARP Regulation and the ARP group, please visit:

http://www.dnrec.state.de.us/ir/aqm_page/arp.htm.

—Article by Richard Antoff, ARP

The styrene in the railcar became unstable and started to polymerize (i.e., solidify) and overheat. As a result, styrene spewed out of the railcar vent line and manway.

Dow Reichhold Specialty Latex Plant — Emergency Response

On Friday evening, August 25, 2006, a DNREC Environmental Protection Officer discovered a release of inhibited styrene monomer that resulted in a Level 3 State Emergency Response Team (SERT) incident at the Dow Reichhold Specialty Latex plant in Cheswold. The styrene in the railcar became unstable and started to polymerize (i.e., solidify) and overheat. As a result, styrene spewed out of the railcar vent line and manway. Styrene vapors from the railcar caused strong odors in the vicinity of the Dow Reichhold plant Friday evening. Responders were concerned that the railcar would over-pressurize and explode from rapid polymerization of the styrene, which is flammable.

Although no hazardous concentrations of styrene or other volatile organic compounds were detected in the air, sections of Rt. 13 were shut down, and the Delaware Technical Community College, as well as approximately 40 homes nearby were evacuated, because of the risk of explosion and fire, and the instability of the situation. DNREC ERT staff worked through the weekend with Delaware Emergency Management Agency (DEMA), Reichhold and



DE State Police - Remotech Andros Robot

local fire officials monitoring and stabilizing the situation.

The Delaware Emergency Notification System (DENS) was activated and homes in a five-mile radius received a message advising them to stay indoors, sheltered in place, to prevent potential exposure to the styrene vapors. Homes within a 1,500 foot radius were evacuated, and businesses and roads in a one-mile radius were closed.

DNREC ERT, including the Division's Environmental Police Officers, monitored the temperature of the railcar and styrene vapors around the railcar remotely with the assistance of the Delaware State Police Explosive Ordinance Disposal Unit and their Remotech Andros robot throughout the day Saturday. DNREC Public Affairs staff worked with DEMA and others to help provide public information about the incident.

The shelter in place was lifted Saturday afternoon on August 26 and the Level 3 SERT was terminated at 7:50 PM Saturday evening, at which time roads and businesses were reopened. By Wednesday, August 30, Dow Reichhold's contractors had stabilized the railcar and were in the process of repairing the vent and manway seals to prepare the railcar for transit back to the manufacturer for material recovery and railcar repair. For more information on the Emergency Response Group, please visit:

<http://www.awm.delaware.gov/EPR/RespGroup.htm>.



Solidified polystyrene plastic appears frozen in mid-flow (8/26/06).

—Article by Ellen Malenfant (ERT)

Delaware Takes EPCRA Data Management On-line

In 2006, the Division's Emergency Planning & Community Right-to-know Act (EPCRA) group implemented the web-based TIER II MANAGER™ system for more efficient EPCRA program management. The Division's EPCRA group collects various reports from businesses on their storage, use and release of chemicals, and makes the data available to emergency planners, responders and the public.

The new TIER II MANAGER™ system allows the group to substantially improve the timeliness of the collection and distribution process for hazardous chemical inventory (Tier II) data from Delaware reporting facilities. Under the old system, the entire Tier II data collection and distribution process was done manually, uploading the information on each individual computer.

Now with the TIER II MANAGER™ in place, much time (and sanity) is saved. Tier II information is entered and available on-line. Facilities can access, update and submit their data by logging onto a secure website. No special software is needed, and their data is always available to them for updating.

Once the information is submitted into TIER II MANAGER™, the data is reviewed and simply approved through various administrative features. Approved facility reports are made available to emergency planning and response organizations.

This new process will significantly reduce the cost of repeating the submissions each year and cut the time in half for data collection and distribution.

With the new system, Local Emergency Planning Committees (LEPCs), 911 Fire Dispatch Centers, and other emergency planning and response organizations can easily access the information through the internet. This program enables the state users

to navigate to various reports about facility emergency contacts, chemicals in inventory, emergency response plans, and on-line mapping of vulnerable population information and hazardous material sites.

In the first year of use with TIER II MANAGER™, roughly 67% of facilities reported on-line (the percentage of facilities reporting on diskette using the old Tier2 Submit software peaked at roughly 56%).

That means the most current data from these facilities is now available almost immediately for use by emergency planners and responders on-line, without delays for processing and distribution.

For more information about the EPCRA group, please visit:

<http://www.serc.delaware.gov/epcra.shtml>

—Article by the EPCRA Group

With the new system, LEPCs, 911 Fire Dispatch Centers, and other emergency centers can easily access the information through the internet, without loading data onto each of their desktops manually.

EPCRA and Your Business...

The federal Emergency Planning and Community Right-to-know Act (EPCRA) was passed in 1986. In 1991, the State of Delaware passed its own Emergency Planning and Community Right-to-know Act which built upon the federal law and created a funding mechanism for emergency planning activities. Through these laws, a series of reporting requirements were established covering large industrial sites, as well as small businesses. In Delaware, implementation of these reporting requirements is handled centrally through the [Delaware EPCRA Reporting Program](#) located within the Division of Air and Waste Management's Emergency Prevention and Response Branch. To learn more about the EPCRA reporting requirements, and whether your business is covered, please visit:

<http://www.serc.delaware.gov/business.shtml>

The draft UST Regulations incorporate all current technologies and include provisions that allow tank owners to petition the Department for approval of innovative technology in the future.

New Draft Underground Storage Tank Regulations

The Division's Tank Management Branch (TMB) conducted three public meetings in September 2006 to present new draft regulations for underground storage tank (UST) systems. The Delaware *Regulations Governing Underground Storage Tank Systems* were last revised in November 1994. In the ensuing twelve years, technologic advances have changed the face of UST management. Innovations such as non-corrosive construction materials, computerized release detection equipment, enhanced spill containment devices and improved remediation technology are not adequately reflected in the current UST Regulations. The draft UST Regulations incorporate all current technologies and include provisions that allow tank owners to petition the Department for approval of innovative technology in the future.

The draft UST Regulations also include new requirements from the Federal Energy Policy Act of 2005 (EPACT). EPACT requires states to prohibit delivery of product to tanks that are not in significant compliance with the UST regulations, increase inspection frequency to once every 3 years for federally regulated tanks, develop an owner and operator training program, and require secondary containment of tanks and piping at new installations. The United States Environmental Protection Agency (EPA) is tasked with insuring that all states meet minimum standards when implementing EPACT provi-

sions. The draft EPA guidance is available online at: <http://www.epa.gov/OUST/>. EPA will take comments on the draft guidance via mail, fax, or e-mail.

Significant changes to the Delaware UST Regulations include:

- Secondary containment of tanks and piping at new installations including containment sumps for tank top openings and under dispensers;
- Impressed current cathodic protection systems cannot be used to make repairs to failing corrosion protection systems;
- Emergency Generator USTs must incorporate a leak detection method within one year of the effective date of the new regulations;
- Tank Tightness testing cannot be used as a method of leak detection after 12/2008;
- Observation Tubes, Monitoring Wells, and Vapor Tubes cannot be used 5 years after the effective date of the new regulations;
- Existing sumps must be upgraded to be liquid tight;
- Double elbow swing joints must be replaced with flexible connectors; and
- New corrective action timelines for submittal of information.

The draft UST Regulations are available online at: <http://www.dnrec.state.de.us/dnrec2000/Divisions/AWM/ust/> for comments. You may submit comments via e-mail to:

Jill.Hall@state.de.us, or by mail to DNREC/TMB, 391 Lukens Drive, New Castle, DE 19720. If you have any questions regarding the draft UST Regulations, please call Jill Hall at (302) 395-2500.

Comments received from the public will be incorporated into the draft UST Regulations and a revised draft will be presented at a series of public meetings to be scheduled in early 2007. A public hearing will also be scheduled in 2007. The UST Regulations are expected to be promulgated in the summer of 2007.

—Article by Jill Hall, TMB



Removal of 2,000-gallon underground storage tank.

2006 Teacher's Externship with Air Quality Management Section

The Air Quality Management Section (AQM) hosted the University of Delaware's Business/Industry/Education Alliance Teacher's Externship Program during the summer of 2006. The program includes a unique 18-hour professional "externship" for teachers at a business or industrial site. Built on the teacher in the workplace experience, participating teachers learn the principles of contextual teaching and how work skills apply to the Delaware academic standards. The teachers investigate the workplace and then develop methods for showing students the relationship between academics and real-life business, industry, and community applications.

The number of teachers and participating companies/agencies has increased each year, and AQM was delighted to have the opportunity to participate. Three teachers completed the externship with AQM: Sande Caton, Concord High School; Debbie Schrass, Jennie Smith Elementary School; and Alana Meiners, Brandywine School District.

The three teachers "shadowed" several Division staff as they performed their daily responsibilities. Activities included visiting an air quality monitoring station located at the Wilmington Riverfront (see photo) and viewing the environmental laboratory located at the Lukens Drive field office in New Castle.

The teachers each enjoyed the externship program



Joe Martini shows teachers an air monitoring station.

and had many questions and comments for staff. Debbie Schrass stated, "In addition to learning new ways I can teach my students about caring for the environment, I personally gained much knowledge from this experience." She also noted that, "Everyone at DNREC was so friendly and willing to take time to share their knowledge and expertise."

Alana Meiners said, "Thank you so much for facilitating a fabulous externship experience. I learned a lot, and my students will clearly benefit." Sande Caton enjoyed the experience with the Division's staff, "They did a fantastic job with our externship." To learn more about the program, please visit: www.schooltowork-del.org.

—Article by Terri Brixen, AQM

DNREC Enforces New Anti-Idling Regulations

After a year-long education and outreach effort conducted by DNREC in 2005 and 2006, the Enforcement Section began enforcing Regulation 45- Excessive Idling of Heavy Duty Vehicles in the fall of 2006. The regulation prohibits owners and operators of heavy duty on-road vehicles (over 8,500 pounds gross vehicle weight) to idle their engines for a period more than three minutes long.

Violators are subject to a penalty of not less than \$50 and not more than \$500 for each offense (and up to \$1,500 for repeat offenders).

Heavy duty vehicles subject to this regulation include long-haul and delivery trucks, as well as transit and school buses, because these vehicles emit a proportionally large amount of fine particulates.

However, emergency fire, rescue, and lifesaving vehicles are exempt from the regulation, as are situations when the engine is needed for heating and air conditioning. Additional exempt vehicle operating situations are listed in the exemption section of the regulation.

The regulation can be accessed online at: http://www.dnrec.state.de.us/air/aqm_page/docs/pdf/REG_45.pdf, or can be obtained by contacting Phil Wheeler at (302) 739-9402.

Citizens can report idling violations by calling the Division's 24-hour in-state environmental notification line at 1-800-662-8802.

— Article by Phil Wheeler, AQM

**DELAWARE
DEPARTMENT OF
NATURAL
RESOURCES AND
ENVIRONMENTAL
CONTROL**

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events.**



Integrity, Respect and Customer Focus

The Division of Air and Waste Management oversees the handling, transferring and storing of solid and hazardous materials by regulating, monitoring, inspecting, enforcing and responding to emergencies. The Division also implements the state's air monitoring, permitting and compliance programs. The Division's responsibilities include administering air and waste programs including:

- Delaware's Air Quality Section — air monitoring and regulating air emissions.
- Tank Management Branch — maintenance and installation of underground and above ground storage tanks & overseeing cleanup of tanks which may leak.
- Emergency Prevention and Response Branch — preventing industrial accidents, assuring emergency planning and community right-to-know, and responding to environmental emergencies.
- Enforcement Section — the Environmental Protection Officers enforce the state's air, waste and water pollution laws, and participate on DNREC's Environmental Response Team by responding to environmental emergencies.
- Site Investigation and Restoration Branch — remediation of sites contaminated by hazardous substances (Superfund/Brownfields/Voluntary Cleanup Program).
- Solid and Hazardous Waste Management Branch — reuse, recycling, transport and disposal of solid and hazardous waste.

EASY REFERENCE PHONE NUMBERS

- 24-Hour Report and Spill Notification Line - 1-800-662-8802
- Aboveground Storage Tanks - 302-395-2500
- Air Quality - Dover Office - 302-739-9402
 - New Castle Office - 302-323-4542
- Asbestos - New Castle - 302-323-4542
 - Kent & Sussex - 302-739-9402
- Boiler Safety - 302-744-2735
- Brownfields - 302-395-2600
- Emergency Prevention and Response - 302-739-9404
- Enforcement - 302-739-9401 or 1-800-662-8802
- Hazardous Waste - 302-739-9403
- Medical Waste - 302-739-9403
- Open Burning - 302-739-9402
- Outreach Ombudsman - 302-395-2515
- Recycling - 302-739-9403
- Site Investigation & Restoration Branch (Superfund/Brownfields) - 302-395-2600
- Solid Waste - 302-739-9403
- Underground Storage Tanks - 302-395-2500

DID YOU KNOW?

DNREC is establishing a trial community yard waste site in New Castle County where residents can drop off yard waste and remove mulch created from the yard waste, free of charge. The site is owned by DART – Delaware's statewide transportation provider – and will encompass approximately 3 to 5 acres of DART's Mid-County facility near Bear. For more information on the pilot, please visit: <http://www.dnrec.state.de.us>.