



“SHARPER INSIGHT”

November 2010

EarthRes Group Opens New “Green” Headquarters Building:



EarthRes Group Inc. is on the move!

The company has relocated to a new and larger “green” building just down the road from its former location in Pipersville, Pa. The new headquarters - which includes numerous design elements that increase energy and water use efficiency - is already winning praise from the firm’s employees and is expected to earn national acclaim for its cutting-edge design and innovative features. *continued on Page 2*

New Employee Announcements

EarthRes takes pride in offering our clients the best and brightest employees we can gather. This quarter we are pleased to introduce and welcome the following new employees to our engineering and project management team.

Project Manager

Randall E. Walleit

joins EarthRes with 35 years of proven leadership and expertise directly related to mine planning and operation. His career includes serving as Vice President for Independence Construction Materials (ICM) and Vice President/General Manager for Martin Marietta Materials (South Carolina District). Randy has mining experience in surface and underground operations, has expert knowledge working with raw materials ranging from limestone to granite to sand and gravel, and he has worked on mining operations in 14 states. Randy earned his B.S. degree in Geology from Dickinson College and has been an active member of the Society of Mining Engineers and the Geological Society of America for the past 35 years.



Senior Engineer/Project Manager

Gary M. Bulik, P.E.,

joins EarthRes with a diverse and impressive background in managing and coordinating project approvals and permits with PA DEP, NJ DEP, USACOE, county soil conservation districts and municipal land development plan approvals. His expertise includes civil engineering design, construction and startup of various facilities (including solid waste management, industrial redevelopments, non-coal surface mining, commercial and residential subdivisions). Gary earned his B.S. degree in civil/construction engineering from the University of New Mexico and is a licensed professional engineer in Pennsylvania and New Jersey.



EarthRes Group, Inc.

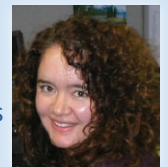
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Laura M. Balogh, QEP

Laura has been elected as an Officer on the Board of Directors for the Mid-Atlantic States Section of the Air & Waste Management Association (MASS-A&WMA). Ms. Balogh will serve as Secretary for 2010.



MASS-A&WMA is a professional, non-profit association of engineers and scientists working in the environmental field, with a particular focus on issues related to air and waste. For more information visit: www.mass-awma.net.

EPA Proposes Major and Area Source Boiler MACT Standards

By: Holly Shoup-Bruch

In a parallel rulemaking on June 4, 2010, EPA proposed National Emission Standards for Hazardous Air Pollutants (NESHAP) for new and existing industrial, commercial and institutional (ICI) boilers and process heaters at both Major and Area Sources of Hazardous Air Pollutants (HAPs) under 40 CFR Part 63, Subparts DDDDD and JJJJJ. These proposed standards apply to new and existing ICI boilers and process heaters, with only a few narrow exemptions. Depending on the capacity and fuel type, affected boilers will be subject to emission limits and/or work practice standards.

These proposed standards apply to new and existing ICI boilers and process heaters, with few narrow exemptions.

Existing boilers will be required to undergo an energy assessment if the capacity of the boiler is ≥ 10 MMBtu/hr. These proposed standards are expected to impact many industries, and will affect decisions to use alternative fuels. EarthRes can assist your facility in assessing source applicability and/or exemptions as well as detail requirements for Maximum Achievable Control Technology (MACT) compliance. Comments were due to EPA on August 23, 2010.

Please visit our website, www.earthres.com, and click on *NEWS* for a complete summary of the proposed Boiler MACT standards.

EarthRes Group Opens New "Green" Headquarters Building: *continued*

"We're going green with our new office building," said Jan Hutwelker, President of EarthRes, "and we're on track to earn national recognition for our commitment to sustainable, environmental friendly design and construction." Based on practical and measurable use of green building design, construction, operational and maintenance solutions, EarthRes has applied to the US Green Building Council for certification of its new building in the Leadership in Energy and Environmental Design (LEED) program.

"A lot of care and thought went into every aspect of the design and building of our new facility," said Hutwelker. "We're especially proud of green features like our heating and ventilation systems which deliver significant, money-saving, energy efficiency and greatly improve employee comfort."

The new EarthRes building has a geothermal system that uses the constant temperature below the Earth's surface as a source of heating and cooling, resulting in 35% less energy consumption than a conventional system. The system works like a reverse refrigerator. It removes heat from one location and deposits it in another, maximizing heating and cooling efficiency. Energy recovery ventilation units, several zoned heat pumps, and a building automation system further help to reduce energy use.

Smart water use is a key element of the new EarthRes building's design, which includes a rainwater harvest system. Collected rainwater is used for landscaping irrigation and toilet flushing. This capture and re-use system also

decreases the building's environmental effect on the local watershed by limiting surface water run-off at the site.

Lighting is another area where the new EarthRes building really shines. Throughout the building energy efficiency is enhanced through "bright" choices for lighting. Automatic lighting controls dim or turn off lights by using occupancy sensors, significantly reducing energy consumption and extending the life of the lamps. Additionally, glass interior architectural walls provide natural lighting throughout the facility that reduces energy use.

Equal care went into selecting building supplies. Construction materials were chosen based on their ability to improve indoor air quality, and low-emitting paints, woods, carpeting and sealants were used throughout the building. The company was also careful to minimize and recycle waste during construction, and building supplies were purchased locally to reduce the amount of fuel required for transport to the construction site.

The new headquarters promotes a green and healthier lifestyle for EarthRes employees, too. The company provides a bicycle storage rack and on-site showers for employees who choose to ride a bike or moped to work. Also, preferred parking is offered to employees who drive low-polluting, energy efficient vehicles or commute to work by vanpool or carpool. Additionally, the new building includes a complete work-out room on-site which has cardio equipment, free weights and resistance machines that encourage employee health and fitness through regular exercise.

Amendments to Food & Drug Administration Bottled Water Regulations New Coliform Rule

By: Jillian M. Olsen, M.S., QEP

On May 29, 2009, the Food and Drug Administration (FDA) published what has become known in the bottled water industry as the "New Coliform Rule." This new rule amends 21 CFR Parts 129 and 165 to require bottled water manufacturers to test *both* their source water and finished product for the presence of total coliform bacteria. The final rule became effective on December 1, 2009. Here are the key parts of the rule about which you should be aware:

- Bottled water manufacturers that obtain their source water from other than a Public Water System (PWS) must test their source water at least weekly for total coliform. If that source water tests positive for total coliform, the bottler must conduct follow-up testing to determine whether any of the organisms are *E. coli*;
- Source water found to contain *E. coli* will not be considered water of a safe, sanitary quality as required for use in bottled water;
- Before a bottler can use water from a source that has tested positive for *E. coli*, the bottler must take appropriate measures to rectify or otherwise eliminate the cause of *E. coli* contamination in a manner sufficient to prevent its reoccurrence. A source previously found to contain *E. coli* will be considered negative for *E. coli* after five samples collected over a 24-hour period from the same sampling site that originally tested positive for *E. coli* are tested and found to be negative for *E. coli*;
- Analyses conducted to determine compliance with these standards for microbial quality must be made in accordance with the multiple-tube fermentation (MTF) and membrane filter (MF) methods;
- Bottlers must maintain records of corrective measures taken to rectify or eliminate *E. coli* contamination;
- If any coliform organisms are detected in weekly total coliform testing of finished bottled water, follow-up testing must be conducted to determine whether any of the coliform organisms are *E. coli*; and
- If *E. coli* is present in bottled water, then the bottled water is deemed to be adulterated under Section 402(a) (3) of the Safe Drinking Water Act.



On July 14, 2010, EPA issued proposed revisions to the Total Coliform Rule under the National Primary Drinking Water Regulations. The public comment period was open until September 13, 2010.



EarthRes can assist you in complying with the new rule and developing solutions to eliminate fecal contamination of your source water supply. Please visit our website, www.earthres.com, and click on *NEWS* for more detailed information on the New Coliform Rule.

EPA Mandatory Greenhouse Gas (GHG) Reporting 2010 Proposed and Final Rules

By: Nicole C. Wilson, P.E.

Since the Mandatory Greenhouse Gas (GHG) Reporting Rule was issued in October 2009, numerous amendments and revisions have been proposed and/or finalized. These include:

Subpart A – General Provisions

EPA added three (3) new reporting requirements for facilities under Subpart A – General Provisions. This information will be required beginning with the first annual GHG Reports due March 31, 2011 for the 2010 reporting year. Specifically, the following information will be required to be reported:

- Information on facilities' ownership and U.S. parent companies;
- Primary and additional North American Industry Classification System (NAICS) code(s); and
- Whether or not reported emissions include emissions from a cogeneration unit.

Information on ownership and parent companies will be based on one of two proposed options:

- Option 1: U.S. parent company and type of ownership; or
- Option 2: Name, address, and percentage ownership of all U.S. parent companies.

Four (4) new source categories were added on July 12, 2010 to begin GHG Reporting in March 2012:

- Subpart T** - Magnesium Production
- Subpart FF** - Underground Coal Mines
- Subpart II** - Industrial Wastewater Treatment
- Subpart TT** - Industrial Landfills

In addition, EPA has proposed new subparts that would affect new facilities not already regulated under the October 2009 Mandatory Greenhouse Gas Rule. If finalized, affected facilities would begin monitoring and recording GHG data on January 1, 2011 for annual GHG reporting due March 31, 2012.

The new subparts include the following:

- Subpart W** - Petroleum and Natural Gas Systems
- Subpart RR** - Carbon Dioxide Injection and Geologic Sequestration

Additional Sources of Fluorinated GHGs, including the following:

- Subpart I** - Electronics Manufacturing (including manufacture of semiconductors, photovoltaic cells, liquid crystal displays, and micro-electro-mechanical systems)
- Subpart L** - Fluorinated Gas Production
- Subpart DD** - Use of electric transmission and distribution equipment
- Subpart QQ** - Imports and exports of equipment pre-charged with fluorinated GHGs or containing fluorinated GHGs in closed-cell foams (also proposed as Subpart OOa)
- Subpart SS** - Sulfur Hexafluoride and Perfluorocarbons from Electrical Equipment Manufacture or Refurbishment

**Subpart A amendments
were finalized on
September 22, 2010.**

Additional GHG news:

- Proposed rules on reporting of confidential data were issued in June, July and August 2010; and
- Technical clarifications to the rule were proposed in June and August 2010.

National Pollutant Discharge Elimination System (NPDES) Permitting, Monitoring and Compliance

By: Jillian M. Olsen, M.S., QEP

On October 9, 2010, the Pennsylvania Environmental Quality Board published final rulemaking to rescind 25 PA Code Chapter 92, relating to the National Pollutant Discharge Elimination System (NPDES) permitting, monitoring and compliance and replace it with a new Chapter 92a of the same name.

The primary goal of the rulemaking was to reorganize Chapter 92 so that it was consistent with the organization of the companion Federal regulations set forth in 40 CFR Part 122. The following substantial changes are included in the reorganized Chapter 92a:

- Incorporation, by reference, of the Federal regulatory provisions set forth in 40 CFR Parts 122, 124 and 125;
- New permit fee structure, using a sliding scale of application fees and new annual fees based on the design flow of the point source discharge;
- The Department's average annual consideration of Local and County Comprehensive Plans and zoning ordinances when reviewing permit application will continue to be implemented through policy;
- All dischargers of treated sewage, except those that discharge from combined sewer outfalls (CSOs), are required to meet the Secondary Treatment Standards (STS);
- NPDES permit requirements for Concentrated Animal Feeding Operations (CAFO) and Concentrated Aquatic Animal Production (CAAP) facilities are now included in Chapter 92a; and
- If new or changed water quality standards are enacted by the Department, the permittee will be required to take necessary actions to comply with the new water quality standard or treatment requirements.

EarthRes can assist you in complying with these new NPDES permitting provisions. Please visit our website, www.earthres.com, and click on *NEWS* for a complete copy of the final rulemaking.



EPA Expands Regulation of Compression Ignition (CI) Reciprocating Internal Combustion Engines (RICE)

By: Holly Shoup-Bruch

On March 3, 2010, EPA finalized a rule to amend the National Emission Standards for Hazardous Air Pollutants (NESHAP) for RICE under 40 CFR 63 Subpart ZZZZ. This final rule adds standards for existing stationary CI RICE not previously regulated, including emergency engines (generators). The final rule applies to the following sources:

- All CI RICE located at area sources (a source that is not a major source) of HAPs;
- All CI RICE ≤ 500 HP at a major source of HAPs; and
- Non-emergency, stationary CI RICE > 500 HP at major sources.

Emission standards have been established and must be met by May 3, 2013.

Subcategory	CO Emission Standard (ppmvd at 15% O ₂)
CI RICE Located at Major Sources	
Emergency < 500 HP	Management Practices Apply
< 100 HP	Management Practices Apply
100 \leq HP \leq 300	230
300<HP \leq 500	49 or 70% CO reduction
>500 HP	23 or 70% CO reduction
CI RICE Located at Area Sources	
Emergency	Management Practices Apply
< 300 HP	Management Practices Apply
300 < HP \leq 500	49 or 70% CO reduction
> 500 HP	23 or 70% CO reduction

Instead of promulgating numerical emission standards for all existing stationary CI RICE, the EPA decided to institute management practices for sources based on engine size. These management practices include:

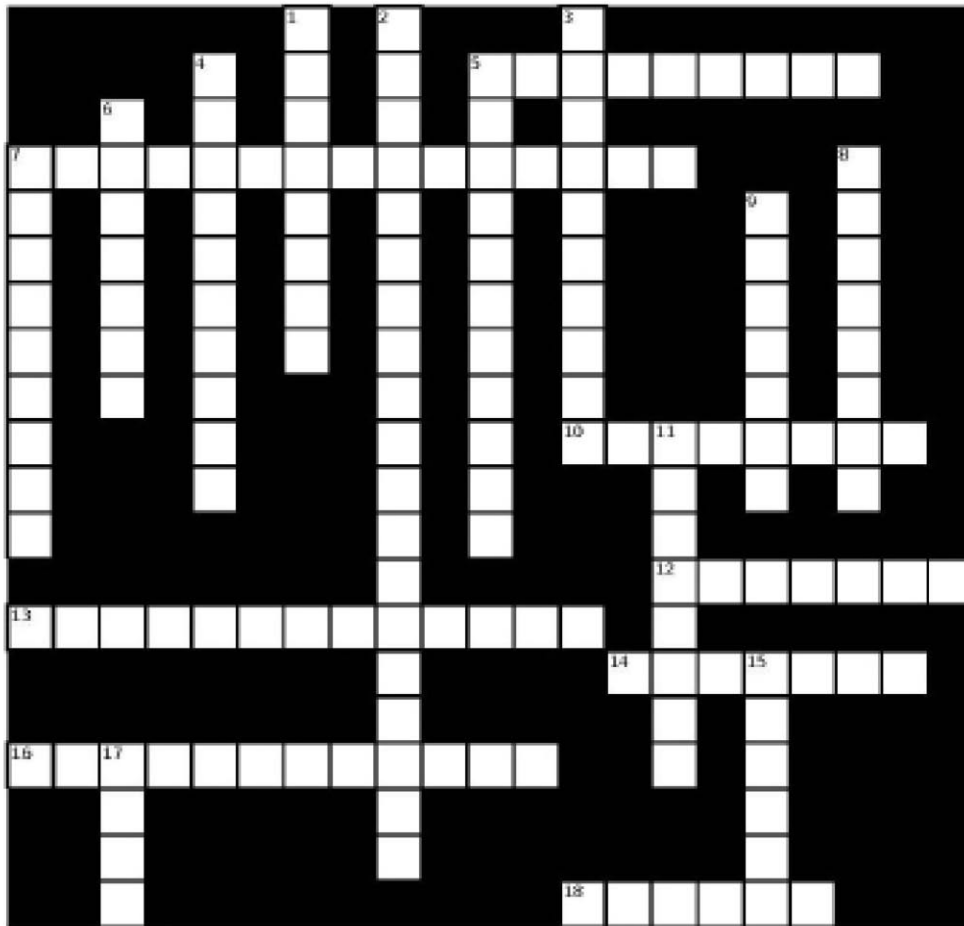
- Changing oil and filters;
- Inspecting air cleaners; and
- Inspecting all hoses and belts.

In addition, emergency engines must have a non-resettable hour meter. Operation standards for periods of startup have been added and include minimizing the length of startup and time the engine spends at idle. In order to demonstrate compliance with the final rule, owners and operators of CI RICE that have a numerical emission limit must conduct initial performance testing, and depending on size (>500 HP), may be required to conduct routine performance testing. Owners and operators of engines subject to management practices are not required to conduct performance testing, but must instead follow manufacturer recommendations and develop a maintenance plan.

The final rule was effective on May 3, 2010 and did not include standards for existing spark ignition (SI) engines. EPA finalized requirements for existing stationary SI engines under a separate rulemaking on August 20, 2010. Owners and operators of CI RICE should consider this final rule and complete any actions necessary for compliance.



Take A Break



Across

5. At least a mile of this separates Marcellus Shale from freshwater aquifers.
7. Used to thicken fracturing fluids.
10. Drilling fluids, frac flowback water and production brines.
12. Maximum number of horizontal wells that can be drilled from one drilling pad.
13. Rock cuttings and related mineral residues generated during the drilling of an oil or gas well.
14. A proposed bill that would impose regulations on hydraulic fracturing.
16. Marcellus Shale underlies Pennsylvania, and portions of New York and _____.
18. _____ and clay minerals are lithified to form shale.

Down

1. Geologic period 390 million years ago.
2. Is used to extract natural gas from the formation using water, sand and additives.
3. Is the dominant lithology.
4. Cleanest burning fossil fuel.
5. Geochemical classification of Marcellus Shale.
6. Speculative exploratory operation.
7. Property of splitting easily along the bedding plane.
8. This process takes place after a well has been drilled to its desired horizontal and/or vertical depth.
9. The space between the well casing and the bedrock.
11. Created when a charge is used to perforate the casing and shale formation.
15. Steel casing and _____ are used to fill the space between the well casing and bedrock.
17. Used as a propping agent in fracturing fluids.

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Noteworthy Events

- **September 8-9, 2010:** EarthRes hosted a booth and presented a paper at the PWIA/SWANA/DEP/PAHMI 12th Fall Pennsylvania Waste Conference at the Harrisburg Hilton Hotel, Harrisburg, Pennsylvania. Please visit www.keystoneswana.org for more information.
- **October 3-6, 2010:** EarthRes hosted a booth at the Global Waste Management Symposium at the JW Marriott San Antonio Hill Country Resort & Spa, San Antonio, Texas.
- **October 27, 2010:** EarthRes hosted a booth at the PA Chamber of Commerce Environmental Compliance Issues Conference at the Crowne Plaza Valley Forge, King of Prussia, Pennsylvania.
- **November 16-17, 2010:** EarthRes will be attending the Pennsylvania Aggregates & Concrete Association (PACA) 2010 Annual Meeting at the Hotel Hershey, Hershey, Pennsylvania.

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