



Mid-Atlantic Chapter Solid Waste Association of North America

President

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240-777-6401
Montgomery County

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SCS Engineers

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(410) 381-4333
Geosyntec Consultants

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(301) 600-3043
Frederick County

SOLID WASTE NEWS For Waste Professionals

October 1, 2009

Coast to Coast

By: *Steve Lippy & Ewoud Hulstein*
Baltimore County

On August 12, 2009, a SWANA Board of Directors meeting was held at the U.S. Coast Guard Yard in Curtis Bay in Anne Arundel County, which straddles the boundary with the City of Baltimore. Following the meeting and lunch, SWANA members were invited to tour the new "Landfill Gas Renewable Energy Center" (REC) and the Coast Guard Shipping Yard.

The Landfill Gas REC officially opened on Earth Day 2009 (*See Photo 1*). The Facility is located on the Coast Guard Yard property, but it utilizes landfill gas (LFG) generated by the City of Baltimore's Quarantine Road Landfill. The Quarantine Road Landfill is located on a 157-acre property and is less than one mile from the Coast Guard Yard property.

LFG is extracted by 34 extraction wells, which were placed in known areas of landfilled municipal solid waste. It is estimated that 45 percent of the used air space is MSW with the remainder consisting mostly of incinerator ash and Construction & Demolition-type waste. The LFG is transported from the Landfill to the REC via a single 12-inch HDPE pipeline that crosses I-695, a city road, and railroad tracks. The LFG conveyance pipeline terminates inside the 5,000 square foot building of the REC where it is internally combusted by four (4) Jenbacher 320 landfill gas engine generators (*See Photo 2*), each with an output of 1.0 Megawatt (MW). In addition, waste heat is recovered to deliver steam to the Yard's steam distribution center.

COAST TO COAST continues on page 4



Photo 1



Photo 2

SWANA Mission Statement:

"Advancing the practice of economically and environmentally sound solid waste management in North America."

Who Passed Gas?

By: *Stephen T. Lezinski, Engineer III*
Montgomery County DEP/DSWS

No No No... Hear me out; this is the “good” kind of gas! With the proper collection and management of landfill gas, a virtual nuisance can be converted into a valuable energy commodity.

In December 2007, the Montgomery County Department of Environmental Protection (DEP) teamed with the Northeast Maryland Waste Disposal Authority (NMWDA) and its engineering contractor, SCS Engineers (SCS) to design/build/operate two (2) landfill gas-to-energy facilities at the Oaks and Gude Landfills. Design and permitting were completed within one-year and after seven-months of construction and start-up testing; DEP has two beneficial use facilities that collectively generate 3.2 Megawatts (MW) of electricity.

The Basics – during operation and closure, a landfill will generate various gases, including methane via waste decomposition. Under the Resource Conservation and Recovery Act (RCRA), solid waste management facilities are required to control the migration of landfill gas, primarily due to the explosive potential of methane. As a point of reference, natural gas typically consists of 90 percent methane, whereas landfill gas ranges from 40-50 percent methane.

The gases generated by waste decomposition are collected through a network of vertical and horizontal pipes, which are connected to a blower (e.g. fan) that exerts a negative pressure on the landfill. The blower draws the gas to a Flare Station for flame burning (no energy value) or to a gas-to-energy facility where the gas is burned in an internal combustion engine that will turn generators and subsequently produce electricity.

The Facilities – The Oaks Landfill is approximately 170-acres in size and is located at 6001 Olney-Laytonsville Road in Laytonsville, Maryland. The gas-to-energy facility utilizes approximately 900 standard cubic feet per minute (scfm) of gas in two engines: Caterpillar 3520 and Jenbacher GS 316 (*see Photo 1*). The existing candlestick Flare is utilized on an as-needed basis for gas control to supplement the gas-to-energy facility if gas migration is detected. The two engines in conjunction with support equipment (pretreatment

skid, transformers, switchgear, etc.) generate and transmit approximately 2.4 MW of electricity, enough to power just over 1,500 homes year round.

The Gude Landfill is approximately 100-acres in size and is located at 600 E. Gude Drive in Rockville, Maryland. Previously, from 1985 to 2006, a gas-to-energy facility operated on the Gude site that initially generated 2.7 MW of electricity. The new gas-to-energy facility utilizes approximately 300 scfm of gas in a single Jenbacher GS 316 (*see Photo 2*) and the remainder of gas is burned in the existing enclosed stack Flares. The single engine with support equipment generate and transmit approximately 0.8 MW of electricity, enough to power close to 500 homes year round.

LANDFILL GAS continues on page 3



Photo 1



Photo 2

LANDFILL GAS from page 2

The Green Aspects – The gas-to-energy facilities will collectively produce enough electricity to power approximately 2,000 homes year round. Estimated environmental offsets from the Gude Landfill gas-to-energy facility include the reduction of approximately 4,557 tons of carbon emissions with respect to diverting power generation from coal-burning power plants. This is equivalent to planting approximately 9,500 acres of trees or taking more than 6,670 cars off the roads. The environmental offsets from the Oaks Landfill gas-to-energy facility will be three-fold as it produces three times the amount of electricity.

The Economics – Costs for both gas-to-energy facilities combined will total approximately \$7.3 million. Expected revenues from the sale of electricity and renewable energy credits should enable DEP to recoup its capital investment within 7 to 10 years, depending upon rates in future electricity sales agreements and market conditions.

Midshore II Regional Solid Waste Facility Project Status Update

*By: William E. Chicca, Chief, SW Engineering
Maryland Environmental Service*

The Maryland Environmental Service (MES) is aggressively moving forward with the construction of the second in an eventual series of four Regional Solid Waste Management Facilities to serve the citizens of Talbot, Caroline, Kent and Queen Anne's Counties, the jurisdictions that make up the Midshore Partnership. The first regional landfill, Midshore I was constructed in Talbot County near Easton. The facility opened in 1991 and is scheduled to cease accepting MSW on December 31, 2010. The second regional landfill, Midshore II is being constructed at a site near Ridgely in Caroline County. This second regional landfill is scheduled to commence full operations on or before January 3, 2011.

The initial phase of landfill construction includes development of the first cell, a 13.7-acre double-lined waste disposal area and the necessary site infrastructure. The landfill's liner system exceeds both COMAR and 40-CFR standards, and consists of two 60-mil textured HDPE membranes separated by a leak detection system, both placed over a two foot thick prepared clay liner with an in-place permeability less than or equal to 1×10^{-7} cm/sec. A 12-inch protective drainage layer with in-place permeability greater than or equal to 1×10^{-3} cm/sec will be installed over the geomembrane for protection. The site development features include a combination administrative/maintenance building, a scale house with in-bound and out-bound scales, two stormwater management ponds,

three bottomless culvert stream crossings, a 500,000-gallon glass lined, bolted steel leachate storage tank and truck loading facility and on-site roadwork. Off-site improvements include upgrades to a one-half mile section of River Road and a roundabout to be constructed at the intersection of River Road and MD Route 480. Geosyntec Consultants developed the engineering design for the landfill system.

On May 28, 2009 a competitively bid contract for approximately \$9 million was awarded to David A. Bramble, Inc., for the initial construction work. Notice to Proceed was issued June 4, 2009. The project is currently on schedule to be substantially complete in July 2010. The stormwater ponds are installed and waste disposal cell area clearing and grading is substantially complete. Entrance road grading and grading in the vicinity of the maintenance/administration building is continuing. Placement of the select clay liner is scheduled to commence in September and membrane installation is scheduled to begin in October. Off-site road improvements will begin in 2010. MES anticipates that the cell will be completed and select waste fluff layer placement will commence in September 2010, with full-scale operations to begin no later than January 3, 2011.

For further information concerning the new regional landfill, contact Bill Chicca at MES at 410-729-8303 or via email at bchic@menv.com.

COAST TO COAST from page 1

To many in the tour group, the technical aspects were as interesting as the political background (landfill gas agreements between the Federal Government and a local municipality are not commonplace). The tour group also enjoyed the detailed explanations and responded with numerous questions, all of which were answered by the knowledgeable staff.

After the REC tour, Bob DeMarco, the Yard Environmental Engineer and former employee of Anne Arundel County, SWANA member, and Chapter Board member for 5 ½ years, gave an “insider’s” tour of the 112 acres Shipyard. This was a unique opportunity for many of us to witness some of the Yard’s activities, such as ship construction and repair. The group also toured the inside of a “Coast Guard Cutter” ship as it was preparing for an extended mission on the Chesapeake Bay. This Yard, except for a small one in Alaska, is the Coast Guard’s only repair facility. Photo 3 presents a Crane or a Transformer (you be the judge) that is used in the Yard to load and unload various cargo and equipment.



Photo 3

Special thanks to Bob Demarco and the U.S. Coast Guard Yard for hosting our meeting, as well as a unique and very interesting tour.

Reminders / Wanted

- ♦ **“Reporters”/writers for our Chapter newsletter.**
- ♦ **Important Websites to Remember:** www.swana.org, www.swana-midatl.org & www.mdrecycles.org.
- ♦ **Training the Trainers:** Contact a Board member if interested in being trained to be a trainer for a SWANA course.
- ♦ **SWANA E-sessions:** If your organization presents e-sessions, make them a Chapter event so that all attendees can get CEU’s. Contact Steve Lippy or Dana Murray or Shirl Wright.
- ♦ **Job Vacancies in your Organization:** Contact swright@nmwda.org for inclusion in our Chapter newsletter.
- ♦ **Articles, information, recent/on-going projects of interest, active purchase orders, etc.:** Contact swright@nmwda.org to be placed in our Chapter newsletter.
- ♦ **Scholarship Sponsors:** Contact Steve Lippy, Mehal Trivedi or Hallie Clemm.
- ♦ **Name(s) of Prospective SWANA Members:** Contact either our Chapter Membership Chair, Jessica Martin (jmartin@tenax.com) or Dave Hernandez at SWANA (dhernandez@swana.org), or direct the prospective member to our Chapter website (www.swana-midatl.org) or SWANA’s website (www.swana.org)
- ♦ **Newsletter Ads:** These are business card size ads only (2” x 3.5”); \$100 for 4 issues. Send your business card or a JPG file and a check made payable to: Mid-Atlantic Chapter of SWANA and mail to Shirl Wright at NMWDA, 100 S. Charles Street, Tower II - Suite 402, Baltimore, MD 21201-2705.
- ♦ **American Academy of Environmental Engineers:** If you are an environmental engineer, you are eligible to become a member or to be certified in solid waste management by the American Academy of Environmental Engineers. See <http://www.swana-midatl.org/> or <http://www.aee.net/>.



5th Joint Conference
MRN & SWANA's Mid Atlantic Chapter
University of Maryland • College Park, MD
June 25-26, 2009
Conference Re-Cap

Over 150 recycling and solid waste management professionals converged on the Stamp Union at University of Maryland's College Park Campus for the 5th Joint Conference presented by MRN & SWANA's Mid Atlantic Chapter held June 25-26, 2009. 18 exhibitors displayed a wide range of recycling and solid waste management products and services and, over the course of two days, 40 speakers and panelists shared the latest in waste conversion technology, public-private partnerships, commodities futures and more. A lively waste-to-energy debate and energetic game of Jeopardy kept attendees on their toes. **CONFERENCE RE-CAP continues on page 6**

**MRN 2009 Outstanding
Government Leadership Award**



Alicia Moore, Gemma Evans & Alan Wilcom from the Howard County Recycling Division accept the Award from MRN Chair, Bob Stumpf

**MRN 2009 Outstanding
Small Government Leadership Award**



Tanya Adams from the Cecil County Government Solid Waste Management Division accepts the Award from MRN Chair, Bob Stumpf

MRN 2009 Outstanding Environmental and Community Leadership Award



Representatives from the Boonsboro Recycling Task Force accept the Award from MRN Chair, Bob Stumpf

CONFERENCE RE-CAP from page 5

Several presenters agreed to provide their slide presentations for posting on the MRN website at the following link: www.marylandrecyclingnetwork.org/conference-re-cap.

- Anne Arundel County & Community Pickup – Richard Bowen, Solid Waste Recycling Manager, Kelly Mackall, Program Specialist and Robb Fish, Program Specialist, Anne Arundel County Department of Public Works
- The Future for Metals – Gregory L. Crawford, Vice President, Operations, Steel Recycling Institute
- Recycling and Waste Reduction in Capital Projects - Linda Carrier, Solid Waste Operations Manager, Anne Arundel County
- Recycling Innovation in Action - Mike D'Angelo, President, Recycle Bank
- Public/Private Partnerships: Howard County Transition to Chamber of Commerce – Gemma Evans, Recycling Coordinator, Howard County Department of Public Works
- Producing Fuel, Electricity and Money from Recycled Waste – David Freund, Vice President of Business Development, W2Energy
- Federal Economic Stimulus Package: Opportunities For Funding Solid Waste And Recycling Projects – Chris Hurwitz, Technical Programs Manager, SWANA
- Prospects for Paper - Bill Moore, President, Moore & Associates
- Recycling Innovation in Action: RFID Technology - Scott Schimming, Industry Manager for RPC's, Rehrig Pacific
- It's Green; It's Profitable; It's Technically Available – So what's stopping waste-to-fuel projects? - Tony Wong, FirmGreen, Inc.

Special Thanks to the Following Sponsors and Exhibitors

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Congratulations

2009 Scholarship Recipients



Andrew Robert Reighart received the highest score and received a \$2,000 scholarship, each provided by Office Paper System (OPS) under its Kevin Stearman Memorial Scholarship Program and International Scholarship Committee under its Grant H. Flint Scholarship Award.

Excerpts from Andrew Reighart's Essay

Solid Waste management professionals encompass a wide variety of specialized careers including policy analysts, economists, environmental engineers, and public relations specialists. Apart from professionals, it is important to recognize the role collectors, volunteers, and regular citizens play in contributing to successful solid waste management.

As land becomes scarcer, especially near urban areas, and as other environmental issues like climate change become increasingly relevant, it will be important for sectors like solid waste management to develop techniques and policies that address a breadth of issues. Some of these issues include methane emissions from landfills, improving efficiency in energy generation encouraging the reduction of

material, and updating technology so that more types of materials can be recycled.



Kelsey Lynn Pearson received the second highest score and received \$1,500 from the Mid-Atlantic Chapter Scholarship.

Excerpts from Kelsey Pearson's Essay

It is hard to deny that trash has not always existed and it is evident that those employed in waste management systems have, until recently, continually found ways to dispose of the garbage as needed.

Ways of reduction include copying on both sides of paper, refusing to purchase over-packaged goods, and opting to purchase things which will be used more than once.

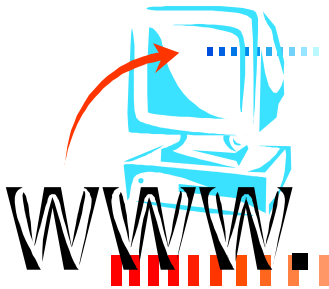
By following a few easy practices however, this issue can be reversed and not only will there be landfills for generations to come, but the environment will

benefit since after all, by following the 3 Rs we are conserving natural resources and consequentially creating a healthier tomorrow.

Other recipients who received \$1,250 each from the Mid-Atlantic Chapter Scholarship are Amy Goudreau, Julie and Justin Hudnet, and Remy Clemm.

Send Us Your "Links"

The SWANA Mid-Atlantic Chapter's website has a designated page for "Links," and we would like to request from all of our Chapter Members that you provide us with your organization's web link. Please feel free to check out our current links at: <http://www.swana-midatl.org/links.htm>. If you are interested in providing your organization's link on the Chapter website, please send to: swright@nmwda.org. Please note that only one individual from each organization need respond.



Chapter Membership Directory

Please let Jessica Martin (jmartin@tenax.com) know of any changes, additions, or deletions to either yours or someone else's contact information.

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Mid-Atlantic Chapter
Solid Waste Association of North America

c/o Northeast MD Waste Disposal Authority
Tower II - Suite 402, 100 South Charles Street
Baltimore, Maryland 21201-2705

Stephen T. Lezinski, Newsletter Editor
steve.lezinski@montgomerycountymd.gov



We're on the Web!
www.swana-midatl.org

October 1, 2009

SWANA Guiding Principle:

"Local government is responsible for municipal solid waste management, but not necessarily the ownership and/or operation of municipal solid waste management systems."