



American Recycler

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Airlines get ranked for recycling

Delta, Virgin America, Virgin Atlantic and Southwest are doing the best job recycling waste, according to the new report "What Goes Up Must Go Down: The Sorry State of Recycling in the Airline Industry" from Green America's consumer watchdog website ResponsibleShopper.org. The report also shows that United and US Airways are doing the worst job when it comes to recycling.

Overall, airlines could recycle nearly 500 million more tons of waste each year (including 250 million tons of in-flight waste). While airlines acknowledge the importance of recycling waste, no airline recycles all the major recyclables: aluminum cans, glass, plastic, and paper. No airline has a comprehensive program for minimizing or composting food waste or waste from snack packages, provides good public information about their recycling program, or reports out on progress in relation to any stated goals. In addition, all airlines provide See AIRLINE RANKS, Page 5

04.2010

How the EPA "Tailoring Rule" may affect landfills nationwide

by MIKE BRESLIN

mbreslin@americanrecycler.com The Environmental Protection Agency's (EPA) proposed Tailoring Rule, developed to minimize the impact of greenhouse gases (GHG) from small sources, is leaving public and private landfill operators in a state of confusion and uncertainty over what it may mean to the already challenging task of operating a landfill under increasingly burdensome regulations in a weak economy.

On February 22, EPA administrator Lisa Jackson retreated from the original Tailoring Rule implementation date and announced that she expects to weaken its proposed standards from stationary sources and delay implementation until 2011. It was originally scheduled to go into effect this March and would have triggered both New Source Review, under EPA's Prevention of Significant Deterioration (PSD) and Non-attainment New Source Review programs, and operating permit requirements mandated under Title V of the Clean Air Act (CAA) for stationary sources emitting greenhouse gases (GHG) including landfills. Her action was largely in response to a letter from eight Democratic senators with



A waste industry source believes the new EPA rule will affect twice as many landfills as those projected by EPA.

strong ties to coal, oil, and industrial polluters, obviously reflecting their constituent opposition.

Many in the waste disposal industry are breathing a sigh of relief at the delay and weakened provisions, among them Ed Repa, director of environmental programs for the Environmental Industry Association (EIA). EIA represents over 2,500 private company members in the waste management industry. "Generally our membership has not been very happy about this and I think a lot of them are hoping that somebody preempts it all. There may be some preemption in Congress that takes care of it. We questioned EPA's authority to divide the world into two pieces, the big guys versus the little guys. According to the Clean Air Act everybody's in. I'm sure there are going to be legal challenges."

A little background on how the Tailoring Rule came to be: Three years ago the U.S. Supreme Court held that greenhouse gases are air pollutants subject to regulation under the CAA. The ruling gave the EPA three options: find endangerment, don't find endangerment or review the science.

Last September, EPA announced its solution, which immediately became highly controversial – the proposed Tailoring Rule that was to regulate GHG from light-duty vehicles. This action would then trigger the See LANDFILLS, Page 6

Small landfills hold

big potential

Millions participate in the Great American Cleanup 2010

Throughout the months of March, April and May, an anticipated 1,200 Keep America Beautiful (KAB) affiliates and participating organizations nationwide will rally an estimated 3,000,000 volunteers to hold litter and debris cleanups on public lands and waterways, host recycling drives, spruce up community amenities like parks and playgrounds, remove graffiti, plant trees and community gardens, and host many more activities designed to improve the environment.

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The 2010 theme, "Green Starts Here," is a rallying call that encourages volunteers, community leaders and people of all ages to begin creating more sustainable communities through their efforts as volunteers, and through their daily choices and actions. It also reflects Keep America Beautiful's long legacy of community improvement activities.

Organizers hope that each participating organization will proudly declare "Green See KAB CLEANUP 2010, Page 8

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Upstate Shredding wins Business of Year Award



Upstate Shredding LLC was presented with the Tioga County Business of the Year Award. The award was presented to Adam Weitsman, president of Upstate Shredding.

2009 was an outstanding year for Upstate. The company is the largest privately owned metal processing and recycling operation on the East Coast and headquartered in Tioga County in Owego, New York. During the year, the company made a \$25 million dollar equipment and facility investment in its Owego scrap metal processing plant to make it one of the most technologically advanced of its type in the world.

Upgrades included housing new equipment in a 200,000 square-foot complex, a major landscaping and beautification program, installing a storm sewer system and an on-site water treatment plant. In doing so, Upstate exceeded the standards of the EPA and the New York State Department of Environmental Conservation, and was the first "green" plant of its type in the State.

At the Owego plant, Upstate expanded its Mega Shredder operation capable of reducing whole vehicles, motor blocks and all types of scrap metals into component streams of ferrous and non-ferrous metals, glass, plastics and other recyclables. This added capability brought a significant number of new jobs to the area.

In December, Upstate, acquired the Matlow Company, Inc. of Solvay, New York, a suburb of Syracuse, to add to its feeder yards in Owego, Binghamton and Ithaca. The new facility will undergo a comprehensive renovation to meet Upstate's high environmental and operational standards. This includes new equipment and buildings, yard pavement, installation of a storm water treatment plant and landscaping for beautification and noise abatement.

AF&PA recognizes programs that aided record increase in paper recovery for 2009

The American Forest & Paper Association (AF&PA) announced that a record-high 63.4 percent of the paper consumed in the United States was recovered for recycling in 2009. This exceeds the industry's 60 percent recovery goal 3 years ahead of schedule. To balance growing global demand for recovered fiber and decreased paper consumption, increasing recovery nationwide remains a priority.

Successful recycling programs contribute to the recovered paper rate. Some of the most effective programs received recognition from AF&PA including the following 2010 AF&PA Recycling Award winners:

•AF&PA School Recycling Award – Parkway School District, Chesterfield, Missouri.

The Parkway School District, serving 18,000 students in 29 buildings, started their recycling program after several elementary students requested of the Board of Education that they be better environmental stewards. The results are impressive, including the recovery of more than 1,031 tons of newspaper, magazines, catalogs, direct mail, office paper, envelopes, and brochures, along with more than 138 tons of paper-based packaging in 2009.

•AF&PA Business Leadership Recycling Award – Continental Airlines.

Thanks to a renewed commitment to the environment in recent years, Continental Airlines has significantly increased the effectiveness of its recycling program by maximizing costeffective, manageable, and sustainable collection efforts. In 2009, Continental recovered 35,000 tons of paper from its aircraft, hubs, offices and supporting facilities.

•AF&PA Community Recycling Award – Virginia Beach, Virginia.

Developed in 1997, the Virginia Beach recycling program includes a customized, voluntary, single-stream, automated system that services 124,000 residents, 94 City schools and 106 municipal buildings, along with five public-use drop-off sites. Thanks to a variety of education and outreach efforts, the City of Virginia Beach recovered nearly 23,800 tons of paper and paper-based packaging in 2009 – more than 68 percent of all recyclables collected.



Hustler Conveyor Company Manufacturers of High Quality Single Stream Systems and Components

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The following letter was submitted to American Recycler in response to the cover story of the December 2009 issue that discussed the burning of poultry waste. The full text of that article may be found at www.AmericanRecycler.com. The opinions expressed are solely those of the author, and do not reflect the thoughts or opinions of American Recycler or any of its employees. In an effort to maintain journalistic objectivity, fairness and to stimulate thoughtful discussion on the subject, we have decided to reprint the letter in its entirety for our readers. American Recycler disclaims any responsibility for the information contained herein.

I'm a physician in a rural North Carolina community where a company, Fibrowatt, that would burn poultry litter to create electricity, proposes to locate.

I write in response to an interview printed in the December issue of American Recycler where a vice president of Fibrowatt explained to an American Recycler reporter a number of benefits from burning poultry litter in Minnesota at their flagship plant, Fibrominn.

Specifically I wanted to respond to what was not mentioned in the article.

The vice president of Fibrowatt said, "We are regulated by federal and state environment regulations and pass all requirements. We use best available technology." He also said that, "The plant meets strict air emission limits for each of the major gasses. Emissions are regulated and monitored by a continuous monitor system."

What he neglected to tell the reporter was that at the time he was being interviewed for this article, Fibrominn was under Open Enforcement Action from the Minnesota Pollution Control Agency for violations of their Minnesota Air Permit.

They had been out of compliance with the EPA for 6 out of 12 quarters according to the settlement below, and they were noted to have excess emissions of three major gasses and of particulate matter. Additionally, they were cited for continuous monitor downtime.

In December (the same month of publication of his comments about being in compliance) Fibrominn was fined \$65,000 by the Minnesota Pollution Control Agency for multiple violations of their air permit.

Fibrominn Violations List, 12/18/09:

•Late HCL testing.

•Late PM10 testing.

•Late mercury testing.

•Late CEMS Relative Accuracy Test

Audit.

•Missed pressure drop range proposal.

•Missed Testing Frequency Plan.

•Missed Performance Test Report.

•Missed Semi-Annual Deviation Reports.

•Missed Compliance Certifications.

Missed Monitor Downtime Report.Missed Silt Road Loading Measure-

ment Report.

•Continuous Monitor Downtime. •Failed performance test-total particu-

late matter.

•Excess NOx Emissions. •Excess SO2 Emissions.

•Excess SO2 Emissions •Excess CO Emissions. •Failure to Self-Report Deviations. The Fibrowatt vice president also failed to mention:

•Fibrominn was required to purchase and install at least \$80,000 worth of new emissions control monitoring equipment.

•Fibrominn never admitted that they violated their permit.

•BACT or Best Available Control Technology only means that the technology is that used by the 12 percent best companies with similar operations. BACT doesn't guarantee anything about effectiveness.

•While Fibrowatt was under Open Enforcement Action local physicians and citizens were not notified of the emissions violations.

•That the farmers in North Carolina will be spending more for fertilizer if poultry litter is burned rather than being creatively applied to crops.

•That these plants are far less efficient at creating electricity and the cost of electricity to citizens goes up.

•Biomass burning is dirtier than coal in many respects.

•Millions of dollars worth of nitrogen is lost into the air in the burning process that creates nitrogen oxide and volatile organic compounds that in turn creates ozone and smog that would increase lung disease.

•Industrial fertilizer is more likely to run off than organic fertilizer.

•Fertilizer made from the bottom ash of the incinerator would contain the heavy metals and some arsenic in poultry litter and it would be put right back on the soil but in a concentrated form and be more likely to run off.

•Analysis of bottom ash from the Fibrominn in 2007 revealed arsenic in the ash when citizens had been told that there was no arsenic in the chicken feed.

•Replacing nitrogen lost in the burning process could increase American dependence on foreign nitrogen.

I'm not a farmer but farmers are my patients, and my patients would also like to note that the vice president didn't mention that:

•42 other physicians and 11 pharmacists in our county have signed letters of objection to poultry litter burning due to increased health risks to our families and patients.

•75 percent of vineyards owners in the Yadkin Valley signed a petition against Fibrowatt and many farmers are against the plan.

•That a poll of the two county area demonstrated that of those who answered, the majority were against this sort of industry.

•Though the Fibrowatt spokespersons likes to point out to potential customers that their process passes the "sniff test" and that they produce little smoke, most of the toxic emissions from this plant are colorless and odorless.

•A study at UNC Chapel Hill entitled "Waste to Energy Conversion: Potential for Environmental Injustice" characterizes the burning of poultry litter as a form of environmental injustice since rural citizens have many of the problems that would be worsened by Fibrowatt emissions. •The letter to the Minnesota Pollution Control Agency that pointed out that their plant was emitting 7.5 times the amount of particulate matter than their permit allowed.

•Particulate matter increases the risk of premature infant death, asthma, chronic bronchitis, heart disease and stroke and affects our children, athletes, old folks and those with chronic diseases the most.

•Dioxins would be produced by this plant as an "unwanted but necessary" byproduct of the process. Dioxins are among the deadliest man-made chemicals. They are listed in the dirty dozen alongside DDT. Both the EPA and the World Health Organization recommend stopping dioxin production at the source. There is no known level of dioxins that don't put a human at increased risk of cancer.

•The main source of dioxins is incineration of hydrocarbons in the presence of chlorine. Poultry litter is laced with chlorine from antibiotics in the poultry feed.

•Dioxins in minuscule amounts (parts per trillion) increase the risk of immune deficiency, neurotoxicity, developmental delay, hyper and hypothyroidism, polycystic ovary disease, endometriosis and affect the fetus, newborn and children the most.

•A study demonstrates that in rural areas where people eat locally grown beef, eggs, milk and fish, dioxins levels in humans increase up to 20 percent in the first two years around incinerators that produce dioxins.

•Pelletizing, broadcasting, deep introduction of poultry litter into the soil or digesting poultry litter does not produce dioxins.

•There are a host of other emissions from a plant that burns poultry litter including hydrochloric and sulfuric acid leading to acid rain, sulfur dioxide (more particulate matter), carbon monoxide, and others.

•Their plant would burn up to 40 percent woody biomass from wood waste.

•Their plant accepts wood waste from Minnesota and five surrounding states.

•Recent studies debunk the myth that biomass burning is carbon neutral.

•A study in 2007 identified their three original English plants (that the vice president referred to in the article) as being among the top 100 dirtiest plants out of over 2000 power plants in the entire United Kingdom.

Farmers and physicians need every grain of horse-sense our parents and grandparents bequeathed us to protect our children and grandchildren from investors like these who don't live in our community and who will never eat our food or breathe our air contaminated by toxic emissions from plants like these.

Signed:

William Blackley, MD, Fellow American Academy of Family Practice and Citizens Alliance for a Clean Health Economy – The Surry County Chapter of the Blue Ridge Environmental Defense League

To share your opinion on this topic, please join the discussion on American Recycler's Facebook page.



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Recycling in post offices increases

More than 200,000 tons, and counting. That's how much paper, plastics and other waste the United States Postal Service recycled in 2009.

An integral part of that undertaking is the Post Office Box Lobby Recycling program which is expanding to include an additional 2,435 post offices, including those in a number of national parks. That brings the total number of participating sites to more than 8,064, an increase of 150 percent from 2005, when the Post Office Lobby recycling effort started. Postal customers are being encouraged to "read, respond, recycle" their post office box mail in lobbies.

Secure recycling bins in post office lobbies are locked and the opening is slim – about the width of a magazine, so the mail, and customer privacy, are ensured. Post office box customers are encouraged to open their mail (read), take whatever action is necessary (respond) and place the rest of it in the bin (recycle).

Partnership expands recycling in Minnesota

The Recycling Association of Minnesota (RAM) and Minnesota Waste Wise announced new recycling opportunities in the Waseca area.

Message in a Bottle[™] (MIB), an away-from-home bottle and can recycling program managed by RAM, and It's in the Bag[™] (IITB), a plastic bag recycling program managed by Waste Wise, began at the Holiday Station Store in Owatona and the Kwik Trip in Waseca as well as many other area businesses on February 3, 2010.

Both of these recycling programs have been highly successful at convenience and grocery stores in the Twin Cities, St. Cloud, Mankato, Duluth, Hutchinson and Hinckley. Success is partly due to the eye-catching recycling containers used by the programs. MIB containers are shaped like soda bottles and IITB containers are clear, making it easy to see what's inside. To date, MIB has recycled more than 500,000 pounds of beverage containers and other plastics. IITB has recycled more than 5.5 million pounds of plastic bags and shrink film.

Airline ranks

Continued from Page 1

over-packaged snacks and meals and none of the airlines are working with manufacturers to reduce this waste.

The Green America airline recycling rankings are (from best to worst): Delta Airlines, Virgin America, Virgin Atlantic, Southwest Airlines, Continental Airlines, Jet Blue, American Airlines, British Airways, Air Tran, United Airlines, and US Airways.

Green America Responsible Shopper lead researcher Victoria Kreha said, "For concerned consumers looking to spend their travel dollars wisely, airline waste may be the ultimate example of 'what goes up must come down.' The good news is that airlines are starting to pay attention to recycling; the bad news is that they have a long way to go to improve the situation.

Fortunately, airlines can overcome any of the challenges to creating inflight recycling programs, including employee education and involvement, knowledge of the type of waste pro-

duced, and a time- and space-efficient system."

The report looks at five areas: variety in waste recycled, future in-flight recycling plans, size of in-flight recycling program, education/encouragement of employees in onboard recycling programs, other in-flight sustainability initiatives, and provides overall rankings.

Nearly 75 percent of in-flight generated waste is recyclable; however, only about 20 percent actually is recycled. According to research published by the Natural Resource Defense Council, annually, airlines throw away 9,000 tons of plastic, enough aluminum cans to build 58 Boeing 747 jets, and enough newspaper and magazines to cover a football field 230 meters deep.

Beyond the environmental benefits, recycling this waste would create jobs nationwide, since according to Colorado Recycles, recycling creates six times as many jobs as landfilling.

> For a copy of the full report, view this article on www.AmericanRecycler.com.



The programs will be partnering with the Minnesota Beverage Association, the USDA Rural Development, Steele County Environmental Services and Jobs Plus-a local vocational center employing adults with disabilities in the Waseca area. Jobs Plus employees will pick up recyclables at participating businesses such as the Holiday Station Store in Owatonna, and then sort and package them for transport. The program is projected to create 10 full-time positions at Jobs Plus.

The program expansion is possible in part to a grant from U.S. Department of Agriculture Rural Development's Solid Waste Management which will provide funding to launch the programs in 10 additional areas throughout Minnesota.

Foam recycling drop-off now in North Carolina

Dart Container of North Carolina unveiled its latest post-consumer foam collection site in Randleman. The free dropoff is a new way for North Carolina residents, businesses and organizations to recycle foam.

Dart's Randleman foam collection site is one of the state's first public sites to accept foam food service containers, including foam cups, plates, take-out containers and egg cartons, as well as shaped or molded foam often used to package electronics.

Once foam is dropped off at Dart, it is compacted and shipped to be used as feedstock to make new materials. To be accepted for recycling, the foam must bear the "6" symbol with chasing arrows.



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Landfills

requirement for control of GHG from all emitting sources and focused on large facilities emitting over 25,000 tons of GHG per year. EPA estimated that approximately 14,000 large sources would need to obtain operating permits that demonstrate they are using the best practices and technologies to minimize GHG emissions. Most are large stationary sources such as power plants, refineries and cement production facilities. About 3,000 of these sources would be newly subject to CAA operating permit requirements, the majority being solid waste landfills emitting methane gas.

Many disagree as to how many landfills would actually be affected. Mike Niemann, landfill gas program technical director for Environmental Information Logistics, a consultant on EPA regulations to Waste Management, Republic Services, Veolia and several municipal clients, sees the numbers much differently than the EPA. "I estimate that upwards of 5,000 landfills will be affected. EPA estimates that only about 2,700 will be impacted. But from everything I've looked at and all the sites I am aware of I don't see that as realistic."

Lisa Jackson's delay in implementing the proposed rule came with other concessions. She expects to take action to ensure that no stationary source will be required to get a CAA permit to cover GHG during 2010. EPA plans on phasing-in permit requirements for GHG for large stationary sources beginning in 2011. In the first half of 2011, only those facilities that already must apply for CAA permits for non-GHG emissions will need to address GHG emissions in permit applications. Jackson expects that GHG emissions from other large sources will phase in the latter half of 2011. Until 2013, the threshold for permitting will be substantially higher than the 25,000 ton limit that EPA originally proposed. The EPA will not subject the smallest sources to CAA permitting any sooner than 2016.

In response to Jackson's February announcement, Senator Lisa Murkowski (R-AK) raised the economy-vs-environment paradox related to complying with potentially budget-busting GHG permitting and remediation costs. "While the delay in implementation is a small step in the right direction, the Clean Air Act continues to be the wrong tool for the job, and EPA's timeline continues to create significant and ongoing uncertainty for a business community. Congress is the appropriate body to address climate policy. Until the specter of command-and-control regulations goes away, it will remain a counterproductive threat hanging over the work that must be done to find common ground. The EPA has restated its commitment to regulating greenhouse gases, down to the smallest emitters, regardless of the economic consequences."

If the Tailoring Rule eventually reaches down to small landfills, the consequences could be dramatic and costly. Larger private waste management companies and large municipalities have dedicated staff that can cope with EPA permitting requirements, although it will take more time and increase cost. "The underlying impact is going to be more onerous permitting requirements on existing and new facilities," said Mike Niemann. "The greatest impact is going to be for facilities not subject to the major operating permit program, a lot of small, closed landfills that under the current permitting framework are minor sources would become major sources requiring Title V permits. That in itself is going to trigger more reporting, paperwork and monitoring."

The permitting requirements imposed by the Tailoring Rule would not only affect landfill operators, but also increase the workload of state regulators. Many state regulators are concerned that they don't have enough staff address potential impacts. That may lead to either higher tax to hire more staff or longer delays to get projects permitted. Further permitting clogs would make a slow system even slower. While some states are diligent in issuing permits, some states are woefully backlogged already and some states have taken as much as five years to actually issue permits.

"Certainly it's going to cost more money to do business. The amount of that increase ultimately depends on how large a facility is and whether we are looking at an operating permit, or obtaining an expansion permit. Expansion permits under the PSD program could be upwards of fifty to one hundred thousand dollars depending on the size of the landfill for just the permit. For a closed facility the impact could be on the order of twenty to forty thousand dollars for an operating permit, plus the annualized increases in monitoring obligations." No doubt additional costs caused by the Tailorin the form of higher disposal costs or taxes. Ultimately, if the EPA mandates that landfills install the best available control technology (BACT) the cost ramifications for many municipalities could be dire. A landfill gas collection system can cost from \$500,000 to over a \$1,000,000. Then there would either be the cost of a flaring system to burn off the volatile organics, or the cost of installing an energy recovery system. Coming up with that kind of capital would be hard for many municipalities without considerable improvements in the economy.

ing Rule would be passed onto consumers

Is there a better way to handle greenhouse gas emissions from landfills? Should landfills be lumped in with industrial emitters under the Tailoring Rule? Perhaps Lisa Jackson could find more sensible solutions through her own Landfill Methane Outreach Program (LMOP), a voluntary assistance program that is already significantly reducing methane emissions from landfills by encouraging the recovery and use of landfill gas (LFG) as an energy resource. Rather than punishing landfills with more regulations, recover valuable energy and create new revenue streams for cash-strapped municipalities and private landfills.

As of December 2009 the EPA claims there are approximately 509 operational LFG energy projects in the United States and 530 landfills that are good candidates for projects. But there are likely many more good candidates. Mike Niemann estimates that methane gas recovery systems have only penetrated between 8 to 12 percent of United States landfills. "I think a lot of facilities that may become subject under Tailoring Rule requirements, especially closed landfills, will be looking for ways to generate additional revenue to help support the costs they will have to bear."

Annika Colston, vice president of emissions reductions projects for Blue Source, a company that invests in municipal gas recovery systems to earn carbon credits believes there are better market-driven solutions to handle landfill emissions. "If EPA regulates municipal landfills then these projects will no longer be eligible to receive carbon credits, because it is no longer voluntary. We think it's an unfunded mandate that really does not consider the current market. It is quite reasonable to say that the vast majority of these municipal landfills that are not currently regulated would install gas collection systems purely based on the carbon market."

The Solid Waste Association of North America (SWANA), the association of over 8,000 members from both the public and private sectors of waste management weighed in on the proposed Tailoring Rule. Shannon Crawford, SWANA manager of legislative and regulatory programs said, "EPA made it clear that it believed that the best way to address this problem posed by GHG emissions would be through legislation directly addressing GHG emissions rather than through the use of tools in the Clean Air Act and we agree with them."

Everyone wants cleaner air, including the waste management industry. Landfills are unique emitters of GHG in the form of methane gas and should be eliminated from the Tailoring Rule. Landfill emissions hold market-driven mechanisms, beneficial energy solutions far superior to cumbersome and costly regulations. It's time for Congress to act and prevent another regulatory morass.

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PLASTICS

Plastics recycler pleads guilty to storing hazardous waste without a permit

Tulip Corporation, of Niagara Falls, New York, pled guilty before United States District Chief Judge William M. Skretny, to a felony charge of knowingly storing hazardous waste without a permit. A charge which carries a maximum penalty of up to \$50,000 per day of violation, a term of probation of 5 years or both.

Assistant United States Attorney Aaron J. Mango, who handled the case, stated that the defendant is a California corporation which is a plastics recycling company. One of the product lines at Tulip involves the re-processing and recycling of shredded battery casings into usable material. Tulip purchases and then re-processes the casings by washing, drying and extruding them. Some are contaminated with lead and therefore were hazardous materials. From October 14, 2004, to July 11, 2007, casings contaminated with lead were occasionally stored outside at Tulip. The storage occurred due to breakdowns in the re-processing equipment and was outside at the direction of the defendant.

The storage of casings outside at Tulip increased in frequency beginning in or about January of 2007, and leading up to July 11, 2007. On July 11, 2007, the New York State Department of Environmental Conservation conducted an inspection and observed approximately 80,000 lbs of casings being stored outside. Samples of the casings were taken by DEC and Tulip, which were analyzed for lead content. All of the samples were above the regulatory threshold for lead, and were therefore hazardous.

U.S. Polymer's program recycles stretch plastic scrap into cash

SUC

DIEGO . MA

U.S. Polymers, Inc. launched a unique program called Green/RedeemTM, The new program recycles stretch plastic scrap commonly used to wrap pallet-sized merchandise ranging from packaged food products to bottled beverages.

According to Randy Haight, U.S. Polymers' president, "Many large bakeries, supermarkets, major retail and

logistics operations use tens of thousands of pounds of clear stretch plastic to wrap goods on pallets for easier stocking and handling. Our unique program picks up this waste material for recycling, turning the scrap plastic into the most sought-after commodity in business today, namely cash."

INTERNATIONAL Ottawa takes steps to manage electronic waste

Rona Ambrose, Minister of Public Works and Government Services, announced that the Government of Canada has introduced new measures for the environmentally sound recycling of federal surplus electronic and electrical equipment that has reached its end of life.

The Government of Canada has established a standing offer for an initial two year period with an optional extension of one year. It is expected that up to 2,000 tons of e-waste will be recycled through the standing offer on an annual basis. The standing offer covers all electronic and electrical equipment that is not suitable for re-use by Computers for



Starts Here," in their own towns and cities, through their own residents, and with their own volunteer opportunities that address the unique needs of the local community.

In 2009, more than 3 million volunteers in 32,000 communities took part in the Great American Cleanup, collecting 64 million pounds of litter and debris, much of which was recycled. More than 243 million plastic bottles and 6.9 million pounds of electronics were collected, volunteers kept 14.5 million pounds of aluminum and steel out of landfills and 36 Schools, re-sale through Crown Assets or that cannot be recycled through existing provincial recycling programs. Equipment includes a wide range of equipment from IT, audio-visual and laboratory equipment to appliances and electric tools.

This method of supply was developed following consultations with other government departments, provincial recycling programs, and industry associations. As part of federal efforts to support Canada's environmental industry, the Government of Canada will continue to consult with recyclers to ensure that future solicitations further promote the development of this emerging industry.

million pounds of newspaper were collected for recycling as well. Volunteers also greened-up their communities by creating or improving 6,400 gardens, xeriscapes and green spaces.

The National Sponsors of the 2010 Great American Cleanup are: The Dow Chemical Company; The Glad Products Company; Nestle[®] Pure Life[®] Purified Water; o.b.[®] tampons; Pepsi-Cola Company; The Scotts Miracle-Gro Company; Solo Cup Company; Troy-Bilt[®] Lawn and Garden Equipment; Waste Management, Inc.; Wm. Wrigley Jr. Co.; Promotional Partners: Crescent Art and Framing Products and Get Green Racing; and Educational Partner: Rubber Manufacturers Association.



Tire/Rubber Recycling at the 2010 ISRI Convention & Exposition May 4 - 8, San Diego Convention Center

The Tire/Rubber Spotlight will focus on the advances being made with rubberized asphalt. As more and more states use rubberized asphalt, it is critical for tire recyclers to serve as the focal point of this conversation.

The Convention will hold a complete track of tire/rubber seminars as well as over 50 workshops, spotlights and general sessions designed specifically for recyclers.

Register Today! Visit ISRIConvention.org. for more details.



Institute of Scrap Recycling Industries, Inc.

INTERNATIONAL

Smurfit-Stone opens recycling office in the Netherlands

Smurfit-Stone Container Corporation's Recycling division announced the opening of its European office in Rotterdam, Netherlands.

The Rotterdam office is part of Smurfit-Stone Recycling International, which represents the Company's recycling and waste solutions business outside North America.

"This is an important expansion of our global activities, which focus on identifying and implementing new and improved ways to support our customers' international businesses," said Mike Oswald, senior vice president and general manager of the Company's recycling division.

The Rotterdam location will source recovered paper in Europe for sale in China through the Company's Shanghai office. The material will also be sold to Smurfit-Stone's customers elsewhere in Asia as well as in Europe and Central and South America.

Smurfit-Stone is investing in automated sort systems and focusing on strategic partnerships with municipalities, waste haulers, communities and environmental organizations in order to mine deeper into the waste stream.

The things that come to those who wait are actually the things left by those who got there first.



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ALTERNATIVE ENERGY BlueFire Ethanol seeks funding for biorefinery

BlueFire Ethanol Fuels, Inc. has submitted an application for a \$250 million dollar loan guarantee for the company's planned cellulosic ethanol biorefinery in Fulton, Mississippi. The application, filed under the Department of Energy (DOE) Program DE-FOA-0000140, which provides federal loan guarantees for projects that employ innovative energy efficiency, renewable energy, and advanced transmission and distribution technologies, was submitted in February and serves as a phase one application in a two phase approval process.

The Fulton plant is already a recipient of an award of up to \$88 million from the U.S. Department of Energy under the Energy Policy Act of 2005 and the American Recovery and Reinvestment Act of 2009. If approved, the loan guarantee will secure the financing for the remainder of the costs to construct the facility, which will produce 19 million gallons of ethanol per year from

woody biomass, mill residue, and other cellulosic waste.

Currently, BlueFire Ethanol is focused on the development of two cellulosic ethanol facilities in Lancaster, California and Fulton, Mississippi.

The fully-permitted and shovelready Lancaster, California facility, BlueFire's first United States commercial plant, will use post-sorted cellulosic wastes diverted from Southern California's landfills to produce approximately 3.9 million gallons of fuel-grade ethanol per year.

BlueFire is in the detailed engineering phase and expects to have all necessary permits for its second commercial plant in Fulton, Mississippi by this summer, putting the company on a path to commence construction by the end of 2010. These two planned facilities will create more than 1,000 construction jobs and, once in operation, more than 100 new operations and maintenance jobs.







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Envirepel Clean Renewable Energy Facility to Reopen Envirepel Energy, Inc., a privately

held company in Vista, California, announced plans to reopen its first Renewable Energy Facility, called Kittyhawk, by the middle of April 2010, after temporarily closing it in June 2009 to address a shareholder proxy effort.

The Kittyhawk Project is a 2.5 MW biomass fueled power generating facility, with additional bio-fuel production from recovered water and CO2. The "anti-global warming" and virtually non-polluting facility design was permitted and built in a commercial business park.

The Company has over 300 MW of projects in various stages of development in California.







The solid waste industry, ranging from collection services to operating landfills, is facing new challenges to maximize the diversion of recyclable materials from the waste stream, operate in a more environmentally responsible manner, and reduce costs while complying with strict government regulations.

To learn more about how the solid waste industry is coping with the many challenges facing them today, American Recycler spoke with Dr. John H. Skinner, PHD, CEO and executive director of the Solid Waste Association of North America.



Q&A

—John H. Skinner

How is the solid waste industry faring in the economic downturn?

Skinner: There are two issues that the industry has faced. One is the decline in volume and the most significant decline has been in C&D waste because the construction of new homes and commercial buildings is really down – I've heard of reductions of over 50 percent. Municipal and residential waste has declined as well, where people are buying fewer things because of the economy – I've heard numbers in the range of 15 percent.

The industry has also been hurt by the decline in recycling revenues due to the complete failure of the recycling markets that occurred about a year ago. The markets have come back somewhat, but not back to their higher prices of two years ago.

Both issues have squeezed the industry and most SWANA members are from local government, which are facing severe cutbacks in types of revenues, so it is affecting solid waste agencies as well. They have been cutting back in services and trying to improve their efficiencies. Some have been running deficits because of the economic downturn, which has led to layoffs, furloughs for certain job classifications, and reductions in the frequency of collections.

What steps has the industry taken to reduce fuel costs, be it installing more efficient engines or purchasing lighter vehicles?

Skinner: There is a lot of interest in all of those types of vehicles – lighter vehicles, hybrids and things like that, but those tend to be longer-term types of issues. Interest is growing in natural gas-powered vehicles – compressed and liquefied natural gas – because of the lower fuel costs and communities are starting to do that. It just takes time.

What is being done to develop recycling facilities at landfill sites, including projects to recover gases and mine for recyclables?

Skinner: The costs of recycling are not being covered by market prices for commodities as they have been in the past, but there is quite a bit being done to recover methane gases. This has been stimulated by the tax credits that were provided under the economic stimulus bill where recovery of methane is qualified as a renewable resource and they receive a production credit. That has led to a lot of interest in gas recovery. There are probably about 500 landfills (about 1/3 of the total across the continent) that are currently recovering landfill gas and selling it as renewable energy or using it to produce electricity.

Also being considered in Congress are renewable portfolio standards and other financial supports, and those will make it a lot more economical for other landfills to recover methane. Maybe another 400-500 can do that if the economics are right.

There is a little bit of interest in mining for recyclables, but not on a wide scale. I know of one or two projects, but they are not being driven by the value of recyclables, but by wanting to reuse the capacity in the landfill. All the landfills that were not developed very efficiently may want to mine out some of the recyclables and refill in an efficient manner.

Is it becoming harder to secure permits to expand landfills and or to build new ones? If so, what is being done to extend the lifespan of existing landfills?

Skinner: There is a considerable amount of effort to expand the life of existing landfills. It is very difficult to get permits for new ones, but if the landfill has a good operating record and history and has dealt with adjoining properties and their owners in a positive way, they can expand their facilities. In some instances expansion has been vertical – an expansion on the same property that the landfill has been operating on originally. Quite often landfill operators will acquire property beyond what they need for their immediate needs, with the idea of going back and expanding it in the future.

Is America facing a situation where landfills will soon be reaching their capacity? Are there ongoing discussions between industry and government to develop solutions before the problem becomes acute?

Skinner: The landfill shortage is a myth and there is considerable capacity in many landfills across the country. There may be some local issues where planning was not done right in a community and particular communities have some capacity issues, but there is over 20 years capacity on average across the U.S. Some landfills have 30 to 50 year capacities, so there is not an immediate problem that we are going to run out of space. The solutions that are being considered for affected communities are longhaul shipments to remote landfills where there is capacity and there is a fair amount of inter-state transport of waste, including rail.

There is also interest in waste-to-energy and other technologies that would reduce the reliance on landfills and this is because people are taking a much longer-term perspective, because at one point we are going to have capacity issues.

New York City no longer landfills within city jurisdictions and it transports its wastes to Virginia, Pennsylvania and even to Ohio. Los Angeles County had a very large landfill that is reaching capacity, but they opened a new one out in the desert and they are going to rail haul – they have many years capacity out there. The first thing that larger cities are doing is looking for capacity elsewhere.

Where do you see the industry in the next five years?

The big issues driving the industry right now are climate change and renewable energy. We are all watching very carefully in Congress and at the state level with respect to climate change regulations, renewable energy and how landfills and waste-toenergy facilities would be treated under that legislation. There are great opportunities to harness the energy from solid waste, recycling and through landfill gas that can fit well in the goals of that legislation. This will drive practices not only for the next five years, but for several decades.

ALTERNATIVE ENERGY AccuStrata receives \$70,000 grant from EPA SBIR supports company's technology to make

solar panel manufacturing more efficient

AccuStrata Inc., a company in the Maryland Technology Enterprise Institute's Technology Advancement Program incubator developing intelligent, real-time optical control systems that improve the manufacturing yield and efficiency of thin-film solar panels, has been awarded a \$70,000, phase-one Small Business Innovation Research (SBIR) grant from the Environmental Protection Agency, university officials announced.

AccuStrata will use the funding to refine its field-tested, patent-protected system for monitoring the effectiveness of thin-film solar panel production in real time, enabling manufacturers to make on-the-fly adjustments and ensure panels' efficiency.

George Atanasoff, president of AccuStrata, said, "Our pilot tests in real production environments have shown



AccuStrata Inc., a company in the yland Technology Enterprise Insti-'s Technology Advancement Pron incubator developing intelligent, time optical control systems that that solar cells manufactured with our system should be able to produce 15-20 percent more power, resulting in increased revenue and profit for manufacturers."

> AccuStrata is developing solutions for both thin-film solar panel and crystalline silicon solar cell manufacturers. The Company also plans to enter additional markets using thin-film deposition, such as nanotechnology, touch screen displays and high-brightness LEDs.

> In late 2009, AccuStrata won a \$150,000, phase-one Department of Energy Small Business Innovation Research grant. In June 2009, the Company received a National Science Foundation phase-one SBIR grant for \$100,000. In August 2009, the Company won another DOE Supply Chain grant for \$150,000 and also received funding from the Maryland Technology Development Corporation through the Maryland Technology Transfer Fund.

Events Calendar April 26th-28th 8th Annual CARE Conference. La Posada De, Santa Fe, New Mexico 706-428-2127 www.carpetrecovery.org May 2nd-4th Moving Ahead 2010: Sustainable Transportation for the 21st Century. Ohio Union Conference Center, on the campus of the Ohio State University, Columbus, Ohio. 614-688-4423 • www.movingahead2010.com May 3rd-6th Waste Expo 2010. Georgia World Congress Center, Atlanta, Georgia. 800-927-5007 • www.wasteexpo.com May 4th-8th Annual ISRI Convention and Exposition. San Diego Convention Center, San Diego, California. 919-563-5291 • www.isriconvention.org May 16th-19th Federation of NY Solid Waste Associations Solid Waste & Recycling Conference with Trade Show. The Sagamore, Bolton Landing, New York. 631-288-2480 • www.nyfederation.org June 22nd-25th Air & Waste Management Association's **103rd Annual Conference & Exhibition** (ACE). Calgary Telus Convention Centre. Calgary, Alberta, Canada. 800-270-3444 · www.awma.org August 15th-17th WASTECON 2010. Boston Convention and Exhibition Center, Boston, Massachusetts. 800-467-9262 · www.wastecon.org September 13th-15th 20th Annual Arkansas Recycling Conference & Trade Show. The Robinson Center, Little Rock, Arkansas.

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ALTERNATIVE ENERGY First Wind receives DOE loan Ohio EPA cleans up guarantee for wind project nearly 7.000 scrap ti

First Wind, an independent United States based wind energy company, was offered a conditional commitment from the Department of Energy (DOE) for a \$117 million loan guarantee to finance the construction of its proposed 30 megawatt (MW) Kahuku Wind project.

Located in Kahuku, Hawaii, the project will have the capacity to generate enough wind energy to power approximately 7,700 Oahu homes each year.

The Kahuku Wind project will support the Hawaii Clean Energy Initiative, which aims to have 70 percent of the state's energy for electricity and ground transportation come from clean energy by 2030. The work on the Kahuku Wind project will create employment opportunities during design, engineering and construction including approximately 200 construction jobs.

The project is in final permitting stages. Construction will begin after the Hawaii Public Utilities Commission approves the project and the DOE guaranteed funding is in place.

First Wind intends to incorporate innovative technology in its Kahuku Wind project: a 15 MVA, 10 MW/hour battery energy storage system to enhance electricity load stability. Developed by Xtreme Power, of Kyle, Texas,

the patented battery system will enable the Kahuku Wind project to store energy and provide as much as 10 MW of power for at least an hour during periods of low wind speeds. The Kahuku Wind project will also include twelve 2.5 MW Clipper Liberty[™] turbines. Manufactured in Cedar Rapids, Iowa, the Liberty turbines are the largest wind turbines manufactured in North America.

The DOE's Loan Programs Office manages the nation's green energy loan portfolio and is authorized to issue loan guarantees under Title XVII of the Energy Policy Act of 2005 for eligible projects that (a) avoid, reduce, or sequester air pollutants or anthropogenic emissions of greenhouse gases and (b) employ new or significantly improved technologies as compared to technologies in service in the United States at the time the guarantee is issued.

First Wind successfully built and currently operates Hawaii's largest wind energy facility, the 30 MW Kaheawa Wind project in Maui. Kaheawa Wind serves nearly 9 percent of Maui's annual electricity needs with clean, renewable energy.



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RUBBER nearly 7,000 scrap tires

recycle 6,780 scrap tires at 10 illegal dumps in Gallia, Jackson, Meigs and Vinton counties. Funding for the cleanups came from Ohio's Scrap Tire Management Fund, which is comprised of a \$1 fee collected on new tires sold in Ohio. Ohio EPA's Scrap Tire Management Program oversees the statefinanced cleanup of tire piles in Ohio that pose the most significant threats to human health, public safety and the environment.

If a landowner fails to remove scrap tires at larger sites, Ohio EPA can hire a contractor to remove the tires, and the owner will be required to reimburse the Agency's costs. For sites with 100 to 2,000 scrap tires, Ohio EPA's Scrap Tire Management Program invites eligible landowners to voluntarily participate in a Consensual Scrap Tire Removal Agreement. As part of this agreement, the state undertakes the collection, removal and proper disposal of up to 2,000 scrap tires of any size and other solid wastes at a property at no cost to the property owner. Ohio EPA hires contractors and often partners with local health departments to clean up the tires. Participating landowners sign an agreement, stating that they either inherited the property with scrap tires on it or were the victim of open dumping.

The scrap tires removed from Gallia, Jackson, Meigs and Vinton counties

The Ohio EPA helped clean up and last month included a mixture of passenger tires and tractor trailer tires. Since a tractor trailer tire weighs about 100 pounds (five times more than a passenger tire), Ohio EPA calculates cleanups in terms of passenger tire equivalents (PTEs). The 6,780 scrap tires cleaned up from these four counties last month equal 8.073 PTEs. Since 2005, a total of 117,591 PTEs have been removed from 63 sites in these four counties which collectively form the Gallia-Jackson-Meigs-Vinton Solid Waste Management District. For the state's consensual removal program, the limit of 2,000 scrap tires is based on actual tires, not PTEs.

> Gallia County - 2,780 PTEs weighing nearly 28 tons were removed from a property on Vaughn Road. This cleanup involved a mixture of 1,280 passenger tires and 300 tractor trailer tires.

> Jackson County – 361 PTEs weighing nearly four tons were removed from a dump on Dark Hollow Road last month

> Meigs County - 3,870 PTEs weighing nearly 39 tons were removed from properties at State Route 124 and Elk Run Road, a dump on Blake Hill Road and scrap tires staging areas at the Rutland Township Garage and Salem Township Garage.

> Vinton County - 1,062 PTEs weighing more than 10 tons were removed See OHIO TIRES, Page 15



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Ohio tires =Continued from Page 14

from three separate dumps on Malone Road, Minerton Road and Goose Creek Road.

Since 1998, Ohio EPA has helped clean up approximately 4.3 million PTEs in Southeast Ohio and 38 million PTEs across the state at a cost of nearly \$51 million. Each year, more than 12 million scrap tires are generated in Ohio. While many of these tires are recycled (an estimated 84 percent) or otherwise properly disposed, some end up in stockpiles or in illegal dumps. An estimated two million scrap tires remain in illegal dumps in Ohio.

As a complement to Ohio EPA's Consensual Scrap Tire Removal Agreement, the Ohio Department of Natural Resources (ODNR) offers a tire amnesty grant to help promote sustainable scrap tire collection drive programs, as well as scrap tire drop off and cleanup events. Ohio EPA can transfer up to \$500,000 per year to Division of Recycling & Litter Prevention from the state's Scrap Tire Fund for scrap tire amnesty days and scrap tire cleanups at the local level. ODNR is using this money to fund the grant and will accept applications through April 5, 2010.

For a link to a list of facilities licensed to accept scrap tires, or for more information about the grants, view this article on www.AmericanRecycler.com.

RUBBER Clearance of waste tires funded by Michigan grants

The Michigan Department of Natural Resources and Environment have awarded \$967,152 in grants for the clean up of scrap tire sites.

These projects will remove more than 960,000 passenger tire equivalents (PTEs),

The Michigan Department of Natural a measure used to account for different burces and Environment have awarded weights and sizes of tires.

The following list of grantees will have until August 31, 2010 to complete contract requirements.

Grantee	County	Amount	PTEs
Benchley, Donald C. & Barbara	Arenac	\$46,890	45,000
Brimm, Michale	Wayne	\$10,000	10,000
Cooley, David	Jackson	\$5,000	5,000
Cros-Lex Recycling	Sanilac	\$59,000	59,000
Crumb, Donald	Monroe	\$9,000	8,750
DNRE - Forest, Mineral & Fire	Various (Cadillac area)	\$3,992	3,992
DNRE - Waterloo Office	Jackson	\$1,765	1,750
Egelston Township	Muskegon	\$8,500	7,000
Ellcey, Herbert	Newaygo	\$12,000	12,000
Fisk, Ronald	Otsego	\$63,000	63,000
Harms, Doris	Macomb	\$12,505	12,380
Holloway Sand & Gravel	Oakland	\$370,000	370,000
Ionia County	Ionia	\$2,000	2,000
Joe's Auto Salvage	Cass	\$55,000	55,000
Johnston, Daniel & Joan	Clare	\$5,700	5,640
L.H. Automotive	Cass	\$53,000	53,000
Lee Auto Sales	Tuscola	\$12,475	12,225
Manigg Enterprises	Alpena	\$95,000	95,000
Mink Salvage Yard	Ottawa	\$100,000	100,000
Oceana Auto Parts	Oceana	\$11,000	11,000
Robinson, Kamala	Mecosta	\$8,000	8,000
Sitts, Russell & Diane	Gratiot	\$1,325	1,320
Wright, Theresa	Allegan	\$22,000	22,000

Mahoning County property ordered to clean up tires

Citing a danger to public health and the environment, Ohio EPA has instructed two Youngstown property owners to remove approximately 13,000 scrap tires from three parcels of land located at 1144 Poland Avenue.

Margaret Davis O'Sullivan of Austin, Texas, and Michael Davis of Abilene, Texas, have until the end of April to arrange for removal and proper disposal of the tires. Until the illegal dump is cleaned up, O'Sullivan and Davis need to ensure health and safety concerns are minimized by reducing the size of tire storage piles, establishing fire lanes and spraying for mosquitoes.

O'Sullivan and Davis are the children and heirs of Max Davis, the owner of the property and tire dump until his death in 2002.

Ohio EPA first documented the scrap tire dump in 2004 and issued two notices of violation to Max Davis, believing he was still the property's owner. In 2008, a fire at the site burned thousands of tires. In 2009, Ohio EPA returned to the property and found burned residuals as well as thousands more tires unaffected by the fire. O'Sullivan and Davis were made aware of the Agency's concerns at that time.

If O'Sullivan and Davis are unable to remove and dispose of all the scrap tires, Ohio EPA will arrange for a thorough clean up and will pursue reimbursement.

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LKQ achieves record results

LKO Corporation announced results for its fourth quarter and full year ended December 31, 2009. Income from continuing operations for the fourth quarter was \$36.5 million and diluted earnings per share from continuing operations was \$0.25. For the full year, income from continuing operations was \$127.1 million and diluted earnings per share from continuing operations was \$0.88. Excluding restructuring expenses of \$0.6 million for the fourth guarter and \$2.6 million for the full year, and excluding the gain on bargain purchase related to the purchase of Greenleaf Auto Recyclers LLC, of \$4.3 million for both periods, diluted earnings per share from continuing operations would have been \$0.23 and \$0.86 for the quarter and full year, respectively.

For the full year of 2009, revenue was \$2.0 billion compared with \$1.9 billion for the full year of 2008, an increase of 7.3 percent. Income from continuing operations for the full year was \$127.1 million compared with \$97.1 million for the prior year, an increase of 30.9 percent. Income from continuing operations for the full year included \$2.6 million, or \$1.6 million after tax, of restructuring expenses compared to \$8.6 million, or \$5.2 million after tax, for the prior year. The results of 2009 also included an after tax gain on bargain purchase of \$4.3 million. The organic revenue growth rate for parts and services was 7.0 percent for the full year of 2009.

As of December 31, 2009, LKQ's balance sheet reflected cash and equivalents of \$108.9 million and long-term debt, including the current portion, of \$603.0 million. The company had no borrowings on its revolving credit facility of \$100 million, although availability was reduced by \$25.8 million of outstanding letters of credit. In addition, during the fourth quarter of 2009, the company elected to prepay \$22.4 million of its term loan payments scheduled for 2010.

METALS

Industrial Services of America shows profits from acquisitions

Industrial Services of America, Inc., (ISA) a company that recycles stainless steel, ferrous and non-ferrous scrap metal, announced financial guidance for the fourth quarter and fiscal year ending December 31, 2009.

For the fiscal year ending December 31, 2009, ISA expects earnings of between \$1.32 and \$1.37 per basic and diluted share on revenues of approximately \$181 million. That compares with fiscal year 2008 earnings of \$0.43 per share on revenues of \$100 million.

The company expects basic and diluted earnings per share for the fourth quarter ending December 31, 2009 to be in the range of \$0.31 to \$0.36 compared to a loss for the quarter ending December 31, 2008 of \$0.69 per basic and diluted share. The loss in the fourth quarter of 2008 included an operating loss of \$0.32 per share and one-time

charges of \$0.37 as reported in prior year.

ISA cites significant changes and investment in its business over the past 18 months that have positioned the company to participate in higher margin segments of the metals recycling business. These investments include:

•Acquisition of Venture Metals and the hiring of its executives;

•Expansion of ISA's primary metal recycling facility in Louisville that more than doubles its usable acreage;

•Road improvements on the thoroughfare and entrance to the Company's primary recycling facility that increase the Company's ability to process and receive shipments of raw metal; and

•Completion of installation of a TSC 80 SXS auto shredder that significantly increases metal processing capacity and end-product quality.

Salvaging Millions by Ron Sturgeon

Autosalvageconsultant.com

Inventory turns: The key metric to making your money work for you

I get a lot of questions about inventory turns because they can be hard to understand. Even harder to understand or model is how turns affect cash flow. However, the entrepreneur who measures turn and appreciates the connection is much more likely to prosper in the long run.

First, defining inventory turns – how many times did you turn your inventory? However, there are many ways to view inventory turns including financially (at cost or retail) and physically.

I will try to make it as simple as possible.

If we buy a widget for \$1,000 and we sell that widget for \$3,000 and we sell one every three months, we have 4 turns annually at retail. (12 months in a year, divided by 3 months, equals 4 turns).

In the auto salvage business, if we pay \$1,000 for a car, and we sell \$1,000 in parts off of it in 30 days, we have 12 turns at cost and 30 days to break even.

Let's think about cash flow. If we pay \$1,000 for a car, and we sell \$3,000 worth of parts off of it in a year, our \$1,000 produces one turn at

retail, and \$3,000 in cash flow. It also produces \$2,000 in gross margin, with a 33 percent cost of goods sold and a 66 percent gross margin.

If we buy a car, and sell \$3,000 off of it in 90 days, we have 4 turns and the same gross margin of 66 percent is applicable, but we produce \$12,000 in annual cash flow. This assumes we take our \$1,000 and reinvest it every 90 days in another car.

In both cases we have a 33 percent cost of goods and a 66 percent gross margin.

So, if you have 4 turns per year, you will produce \$12,000 in cash flow and \$8,000 in gross margin (That's what you pay bills with or buy momma a new car with!).

But, if you have one turn, you only get \$3,000 in cash flow, \$2,000 to pay bills with, and in all likelihood, momma won't get a new car.

The owner of any kind of small business can benefit from understanding how quickly inventory is turning, the different kinds of turns, and how much harder money works when inventory can be made to turn a little bit faster.

Remember, only you can make BUSINESS GREAT!

This article was provided by autosalvageconsultant.com, which was formed in 2001 by recyclers for recyclers, to help them improve their businesses.



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ISRI commodifies director to retire Bob Garino, director of commodi- one of the leading experts on the intric

ties for the Institute of Scrap Recycling Industries, Inc. (ISRI) and the author of ISRI's Friday and Monday Reports, will be retiring at the end of 2010.

Garino has been with ISRI since it was formed in 1987 from the merger of NARI and ISIS and was with NARI for two years before that. He is known as



one of the leading experts on the intricacies of the scrap commodities markets and is well respected throughout both the recycling industry and analyst community.

ISRI has begun the search for Garino's successor and is seeking candidates for the position.

December steel shipments up

The American Iron and Steel Institute (AISI) reported that for the month of December 2009, United States steel mills shipped 6,035,000 net tons, an 11.3 percent increase from the 5,424,000 net tons shipped in the previous month, November 2009, and a 30.8 percent increase from the 4,613,000 net tons shipped in December 2008.

A month-to-month comparison of shipments shows the following changes: hot rolled sheet, up 21 percent; hot dipped galvanized sheet and strip, up 6 percent; and cold rolled sheet, up 3 percent.

Metso plans lay-offs in Germany

Metso has concluded negotiations with the workers council about lay-offs in Metso's metal recycling business. All personnel categories in Metso's unit in Düsseldorf, Germany are affected by the reductions, altogether 115 people.

The primary reason for the lay-offs is that the demand for metal recycling equipment is weak due to low scrap metal prices and decrease in steel production in Europe and North America. The reductions are part of the process to streamline Metso's metal recycling business operations and structure, in order to improve competitiveness in a changing business environment.

Alcoa provides recycling bins

Alcoa will provide 50,000 recycling bins to organizations and communities throughout the United States as part of its 2010 Recycling Bin Program.

"Alcoa and the Aluminum Association have a goal of increasing the recycling rates of aluminum beverage cans in the United States from the current 54 percent to 75 percent by the year 2015," said Greg Wittbecker, Alcoa director of recycling.

Alcoa is partnering with state organizations for allocations based on local needs.

• Oklahoma

• Tennessee

• Texas

• Utah

• New Mexico

• North Carolina

• South Carolina

States receiving bins include:

- Alabama
- Arizona
- Colorado • Florida
- Illinois
- Kansas
- Kentucky
- Missouri

METALS January steel imports up 16 percent

Based on preliminary Census Bureau data, the American Iron and Steel Institute (AISI) reported that the United States imported a total of 1,634,000 net tons (NT) of steel in January, including 1,257,000 NT of finished steel (up 16 percent and 11 percent, respectively, vs. December final data).

Total imports were highest monthly amount since January 2009. Finished imports recorded their highest amount since March of 2009. Finished steel import market share was an estimated 18 percent in January, which is around 3 percentage points higher than in August 2009.

Key finished steel products with increases in January 2010 compared to December include oil country goods (103 percent), heavy structural shapes (40 percent), plates in coils (30 percent) and sheets & strip hot dipped galvanized (26 percent).

U.S. IMPORTS OF FINISHED STEEL MILL PRODUCTS BY COUNTRY OF ORIGIN (Thousands of Net Tons)

	JAN 2010	DEC 2009	2010 Annual (e	2009 st) Annual	% Change 2010 Annual vs. 2009
SOUTH KOREA	150	104	1,805	1,323	36.5%
JAPAN	78	103	936	981	-4.6%
CHINA	66	47	791	1,463	-46.0%
ITALY	48	49	579	323	79.4%
GERMANY	37	43	448	495	-9.3%
UNITED KINGDOM	37	20	439*	179	145.9%
TAIWAN	28	20	334	371	-9.9%
AUSTRALIA	28	26	332	285	16.6%
All Others	785	720	9,419	8,760	7.5%
TOTAL	1,257	1,132	15,085	14,179	6.4%

were from South Korea (150,000 NT, up 45 percent), Japan (78,000 NT, down 24 percent), China (66,000 NT,

In January, the largest volumes of up 40 percent), Italy (48,000 NT, down finished steel imports from offshore 2 percent) and Germany (37,000 NT, down 13 percent).

Steel import permits decline seven percent in February

Based on the Commerce Department's most recent Steel Import Monitoring and Analysis (SIMA) data, the American Iron and Steel Institute (AISI) reported that steel import permit applications for the month of February totaled 1,530,000 net tons (NT). This was a 7 percent decrease from the 1,644,000 permit tons recorded in January and a 6 percent decrease from the January preliminary imports total of 1,634,000 NT.

Import permit tonnage for finished steel in February was 1,194,000 NT, which was a decrease of 5 percent from the preliminary imports total of 1,257,000 NT in January.

All prices are expressed in USD. Printed as a reader service only

In February, the largest finished steel import permit applications for offshore countries were for Japan (113,000 NT, up 45 percent from January), Korea (89,000 NT, down 41 percent), Germany (55,000 NT, up 47 percent), India (53,000 NT, up 184 percent) and Australia (48,000 NT, up 74 percent). Finished steel import market share in February is estimated at 18 percent.

Finished steel import permits for major product categories that registered significant increases in February vs. the January preliminary include reinforcing bar (up 108 percent), wire rod (up 39 percent), and cut-length plate (up 38 percent).



an agreement with Mitsui & Co., Inc., a wholly owned subsidiary of Mitsui & Co., Ltd., wherein each would indirectly own a 50 percent interest in a newly created company, NuMit LLC.

NuMit will invest in various steel and steel related activities, both in North America and globally. Coinciding with the formation of NuMit will be its first investown all of the assets, operations and busi-

Nucor Corporation has entered into ness currently held by Mitsui in Steel Technologies, Inc. Closing of the transaction will occur after satisfactory resolution of regulatory approvals and other closing conditions.

Nucor's previously announced plans to construct a greenfield flat rolled processing center in Monterrey, Mexico will be implemented by Steel Technologies LLC. The processing center is expected to ment, Steel Technologies LLC, which will include pickling, slitting and cut-to-length capabilities to serve customers in Mexico.

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Tion 00 Tibout our opcon
Rubber Processing and
rabbol riooosonig ana
Carpet Grinders!



Plate and Structural	per gross ton	310.00	255.00	308.00	345.00	370.00
#1 & 2 Mixed Steel	per gross ton	300.00	240.00	286.00	340.00	344.00
Shredder Bundles (tin)	per gross ton	248.00	235.00	236.00	250.00	278.00
Crushed Auto Bodies	per gross ton	245.00	235.00	221.00	235.00	284.00
Steel Turnings	per pound	90.00	95.00	107.00	195.00	275.00
#1 Copper	per pound	3.15	2.72	3.10	3.10	3.14
#2 Copper	per pound	2.99	2.62	3.00	3.02	3.03
Aluminum Cans	per pound	.65	.62	.69	.71	.78
Auto Radiators	per pound	1.99	1.75	2.00	2.00	1.97
Aluminum Core Radiators	per pound	.65	.59	.67	.75	.62
Heater Cores	per pound	1.20	1.20	1.47	1.78	1.64
Stainless Steel	per pound	86	74	79	70	99

DISCLAIMER: American Recycler (AR) collects pricing and other information from experienced buyers, sellers and facilitators of scrap metal transactions throughout the industry. All figures are believed to be reliable and represent approximate pricing based on information obtained by AR (if applicable) prior to publication. Factors such as grades, quality, volumes and other considerations will invariably affect actual transaction process. Figures shown may not be con-sistent with pricing for commodities associated with a futures market. While the objective is to provide credible information, there is always a chance for human error or unforeseen circumstances leading to error or omission. As such, AR is not responsible for the accuracy or completeness of the information provided, or for outcomes arising from use of this information. American Recycler disclaims any liability to any person or entity for loss or damage resulting from errors or omissions, including those resulting from negligence of AR, its employees, agents or other representatives.

BUSINESS BRIEFS

David J. Joseph Company acquires Ocala Recycling

■ Nucor Corporation announced that its wholly owned subsidiary, The David J. Joseph Company (DJJ), has acquired the assets and business of Ocala Recycling LLC, currently a subsidiary of Blaze Metals LLC.

Ocala Recycling operates four Ocala Florida facilities, including one automobile shredder. Production at the four yards combined totals over 100,000 tons annually. With the addition of Ocala, DJJ operates a total of 15 automobile shredders throughout its facilities. Ocala Recycling was founded in 1988 and currently employs 90 people.

DJJ will operate the Ocala Recycling facilities as part of Trademark Metals Recycling LLC (TMR).

This acquisition represents another step in Nucor's previously announced plan to utilize DJJ as a platform for continued growth in the scrap processing industry and, specifically, Trademark Metals Recycling's plan to expand in North/Central Florida.

Solotorovsky promotes as CETCO's regional manager

■ CETCO announced the promotion of Scott Solotorovsky to the position of Western regional manager for the building materials group.

Solotorovsky, who has been with CETCO for six years, joined the building materials group as a field services project coordinator, has held the position of market development manager based in Mumbai, India and most recently was the technical sales manager for Northern California.

Safety-Kleen appoints David A. Eckert as CEO

■ Safety-Kleen recently appointed David A. Eckert as its new chief executive officer. Eckert will be elected to the company's board of directors later this year.

Eckert previously served as president, chief executive officer and a director of Iron Age Corporation and as senior executive vice president for Kessler Financial Services, L.P.

Rayco Manufacturing expands dealer network

■ Rayco Manufacturing, Inc. has added Ditch Witch of Oklahoma (DWOK) and Ditch Witch of Arkansas (DWAR) to their worldwide dealer network.

As the first official Ditch Witch dealership, DWOK has been serving the state of Oklahoma for 34 years. They currently have locations in Edmond and Tulsa, Oklahoma. The addition of the Rayco product line offers chippers, grinders and log splitters.

DWAR currently has locations in Benton and Springdale.

Harvey Titanium changes name to Rolled Alloys

■ Rolled Alloys announced that Harvey Titanium officially changed its name to Rolled Alloys, becoming a fully integrated west coast service center.

Sales staff is available on the west coast to handle material inquiries for titanium alloys, nickel alloys, cobalt alloys, stainless steels and duplex stainless steels.

Chipman appointed as SolarDock's new COO

■ SolarDock announced the appointment of Sean Edward Chipman to the post of chief operating officer.

Chipman had served for the previous four years as director of finance at the affiliated McConnell Companies in downtown Wilmington.

In that position, he was responsible for the financial management of a real estate portfolio valued at over \$500 million, and administered more than \$170 million in refinancing proceeds through acquisitions, global refinancings and mezzanine loans. Sean was integral to maintaining McConnell's relationships with banks, vendors, auditors and investors.

Prior experience also included a dual role at National Properties, Inc. He was assistant controller and regional property manager in charge of 750 apartment units in Montgomery & Lehigh Counties, Pennsylvania.



BUSINESS BRIEFS

Nucor to form joint venture with Mitsui

■ Nucor Corporation has entered into an agreement with Mitsui & Co., Inc., a wholly owned subsidiary of Mitsui & Co., Ltd., wherein each would indirectly own a 50 percent interest in a newly created company, NuMit LLC. NuMit will invest in various steel and steel related activities, both in North America and globally. Coinciding with the formation of NuMit will be its first investment, Steel Technologies LLC, which will own all of the assets, operations and business currently held by Mitsui in Steel Technologies, Inc. Closing of the transaction will occur after satisfactory resolution of regulatory approvals and other closing conditions.

Steel Technologies operates 23 sheet processing facilities throughout the United States, Canada and Mexico. It will continue to operate as an independent unit with the existing management team.

Nucor's previously announced plans to construct a greenfield flat rolled processing center in Monterrey, Mexico will be implemented by Steel Technologies. The processing center is expected to include pickling, slitting and cut-to-length capabilities to serve customers in Mexico.

Teacher: Ellen, give me a sentence starting with "I".

Ellen: I is... Teacher: No, Ellen..... Always say, "I am."

Ellen: All right... "I AM the ninth letter of the alphabet."

RISI hires Rahikainen as bioenergy services director

■ RISI announced the hiring of Anne Rahikainen as director of Bioenergy Services.

Rahikainen previously worked as a senior consultant with Poyry Group where her responsibilities included new business development, project management and supporting clients in the bioenergy and forest products industry sectors with key strategic questions such as market and product strategy, growth and new investments. At Poyry, Anne was involved with assessing and supporting numerous bioenergy related investments in the production of electricity, cellulosic ethanol and pellets.

Rahikainen's role at RISI will be to grow the bioenergy services practice by developing new multi-client, subscription and consulting products and growing the customer base within North America and internationally.

Tube City names Bruce C. Campbell manager

■ Tube City IMS, LLC announced that Bruce C. Campbell has joined the Company as manager – Carolina Trading.

Campbell will be responsible for strategic planning, procurement and business development in North Carolina, South Carolina and Tennessee.

Prior to joining the Tube City, Campbell worked at ArcelorMittal Steel's steel mill in Georgetown, South Carolina.

Campbell will be based in Pawleys Island, South Carolina.

SLY announces new sales office in Minnesota

■ Sly, Inc. announced the opening of a new sales representative office in Minnesota.

Bulk Process Equipment (BPE) of Isanti, Minnesota is representing Sly in the states of Minnesota, North Dakota and portions of South Dakota, Wisconsin, and Iowa. Bulk Process Equipment was formed in 1999 by Wayne Anderson to provide assistance with the design and installation of systems incorporating equipment to handle all types of dry bulk products. BPE has two additional salesmen to cover the territory.

Juri Louthcko has recently returned to being a manufacturer's rep after spending several years as a sales manager of material handling and pneumatic conveying systems. Juri has a total of over 18 years experience in the dry bulk materials handling industry. Jeff Kinnunen has been with BPE for two years following previous work experience at the General Mills pilot plant processing dry cereals.

Avalon Holdings appoints new president and CEO

Avalon Holdings Corporation announced the appointment of Steven M. Berry as president and chief executive officer effective March 1, 2010.

Berry was also elected as a director of Avalon. Berry has over twenty-five years of experience in the waste management sector.

Ronald E. Klingle, who previously served as Avalon's CEO, will continue in his role as the chairman of the board.

Enerkem appoints new chief financial officer

Enerkem Inc., a waste-to-biofuels and advanced chemicals technology company, announced that Patrice Ouimet has joined the company as vice-president and chief financial officer.

Prior to joining Enerkem, Ouimet was vice-president, corporate development and enterprise risk management for Gildan Activewear, an international apparel manufacturer and marketer. As a chartered accountant, Ouimet began his career with Ernst & Young. He later worked in the investment banking sector, primarily in the industrial and paper and forest products sectors. Ouimet was director, mergers and acquisitions at Lazard and Director, Investment Banking at CIBC World Markets.

Container lines to raise rates in April

■ Container shipping lines in the Westbound Transpacific Stabilization Agreement (WTSA) are recommending a further general rate increase on ocean cargo moving from the United States to Asia.

Effective April 1, 2010, WTSA carriers say they intend to raise dry cargo rates by \$300 per 40 foot container (FEU) and \$240 per 20 foot container (TEU). Lines have additionally proposed that refrigerated cargo rates increase on April 1 by \$300 per FEU and \$240 per TEU for United States. West Coast cargo, and by \$500 per FEU and \$400 per TEU for all other cargo, including minilandbridge, inland intermodal and all-water shipments from the United States East and Gulf Coasts.



BUSINESS BRIEFS

AISI appoints new director of collaborative R&D

■ The American Iron and Steel Institute (AISI) announced the appointment of Joseph R. Vehec as senior director of collaborative research and development.

Most recently in his career, Vehec has been responsible for AISI's Technology Roadmap Program, a \$38 million collaborative research and development (R&D) effort between AISI and the United States Department of Energy (DOE). As director of the program, he took the lead toward achieving the common goals of 47 individual research projects dedicated to increasing the competitiveness of the United States steel industry, saving energy and enhancing the environment. He was appointed director of the Technology Roadmap Program in 2000.

Vehec joined AISI's Pittsburgh, Pennsylvania office in 1993 as a contract administrator of the Advanced Process Control Program, a \$27 million, 10 year collaborative R&D program between AISI and the DOE consisting of six research projects focused on developing systems for online control of key steps in the production of steel.

Prior to joining AISI, Vehec joined Eichleay Engineers, Inc. in 1981, serving as a financial consultant to the Duquesne Light Electric Utility Company's nuclear construction division. In this capacity, Vehec developed capital budgets, and helped satisfy governmental and regulatory agency financial requirements on Duquesne Light's Beaver Valley Nuclear Power Station multi-billion dollar construction project.

In 1989, Vehec joined Kvaerner Engineers (now Aker Solutions) and was responsible for cost analysis and controls for multi-million dollar steel industry engineering and construction projects.

Universal Stainless raises stainless wire rod base price

■ Universal Stainless & Alloy Products, Inc. announced a base price increase of five percent on all stainless wire rod manufactured at its Dunkirk Specialty Steel, LLC facility. The increase was effective with all new orders placed March 1, 2010 and forward. Current material and energy surcharges will remain in effect.

VEIT registers business for Canadian expansion

■ VEIT, a specialty contracting and waste management company based in Rogers, Minnesota, has become registered to conduct business in Canada. The registration is a result of growth opportunities in Canadian industrial and energy markets,

In addition, VEIT has promoted three executives within its waste management group:

•Steve Halgren has been promoted to president, with overall responsibility for roll-off container, landfill, and waste transfer/recycling operations in Minnesota.

•Russ Reger has been promoted to vice president of roll-off operations, with day to day direction of roll-off and waste transfer/recycling operations in Minnesota.

•Ian Vagle has been promoted to vice president of landfill operations, overseeing activities at VEITs four construction and demolition debris landfills located throughout Minnesota.

Carlone joins PSC Metals as non-ferrous manager

Brian Carlone has joined PSC Metals, Inc., as manager, non-ferrous trading, based in the company's Barberton location.

An industry veteran, Carlone was employed by Metallico Annaco, Inc. for 21 years. He is incoming vice president of the Northern Ohio Chapter of the Institute of Scrap Recycling Industries, Inc. (ISRI).

Carlone resides with his family in Canton. He has an undergraduate degree in business management from the University of Akron.

As manager, non-ferrous trading, he reports to Mark Shapiro, vice president of PSC Metals' non-ferrous trading.

Advanced Disposal acquires Nashville business

Advanced Disposal Services, in Jacksonville, Florida, acquired Waste Removal Services LLC in Nashville, Tennessee.

Berl Mayfield, former owner and operator, will join Advanced Disposal.



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Filtra-Systems 23900 Haggerty Road Farmington Hills, MI 48335 248-427-9090 www.FiltraSystems.com



Transportation Safety Technologies 2400 Roosevelt Avenue Indianapolis, IN 46218 800-428-4449 www.tst-corp.com

AKRO-MILS MANUFACTURES NEW SUPER-SIZE AKROBINS

Akro-Mils announced the expansion of its supersize AkroBins® line with 24" length bins in two new sizes - 24" x 11" x 7" and 24" x 18.25" x 12" H.

Ideal for larger parts and products, the new 24" super-size AkroBins are the only bins of this length that feature optional width and length dividers and windows that allow for even more effective parts separation and versatility in organization.

BUSCH SYSTEMS INTRODUCES NEW BIG BOTTLE RECYCLER

Busch Systems has introduced a new event recycling container. The container stands nearly five feet tall and resembles a plastic pop bottle.

The container is custom designed for large event venues such as stadiums, theme parks and theaters. The container is constructed of plastic generated from 100 percent recycled content.

The free standing recycling container has an optional weighted base. It is equipped with a heavyduty collection bag fastened tightly around the upper lip of the bottles base. The bag can collect upward of 30 gallons of bottles and cans.

Chicago Blower introduces high capacity blowers

for higher filtration requirements. The larger sizes to

14" inlet/outlet pipe size expand the Design 53 Pres-

to 18,000 CFM. The blowers convey a diverse variety

of materials, as well as cool and aerate, and are suited

designed to reduce motor loads and decrease vibra-

tion. The fan housing is constructed of heavy gauge

steel with support gussets added to further reduce

Features include a lightweight aluminum alloy wheel

for the most advanced pollution control systems.

CHICAGO BLOWER INTRODUCES HIGH CAPACITY BLOWERS sure Blower line with pressures to 91" wg and volumes

Chicago Blower

vibration.

FILTRA-SYSTEMS INTRODUCES STIR INDUSTRIAL WATER FILTER

The STiR filter is an automatic back-washable media filter featuring patented fluidization technology. It is ideal for processing industrial wastewater and process water in applications such as: caster water, cooling water, mine site discharge/reclaim waters, and clarifier overflow polishing.

It is a down-flow media filter, capable of removing suspended solids from water streams, with the added benefit of being able to remove oils without the use of water treatment chemicals. By using a mixer, the STiR filter cleans 100 percent of the media in every cycle to eliminate media fouling.

EAGLE EYE OBSTACLE DETECTION SYSTEM REDUCES ERRORS

The Eagle Eye obstacle detection system monitors side and rear "blind areas" or "no zones" for objects within 8 to 10' of the vehicle and reduces accidents by an average of 75 percent.

It consists of up to seven weather resistant sensors mounted around the vehicle and a single driver alert module inside the cab that visually and audibly alerts drivers to hazards.

Eagle Eye reduces backing accidents and enables drivers to safely deliver in uncontrolled environments, make right turns onto narrow streets and navigate through crowded traffic.

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NW OHIO SALVAGE YARD FOR SALE, Approx. 10 minutes from Toledo, established location. 9 acres of property. Approx. 5 acres for salvage yard, approx. 4 acres residential. Approx. 3000 sq. ft. bldg plus outside storage sheds. Some equipment available. rapidly growing area. Serious inquiries only. Land contract possible. Call 419-356-4255.

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FUCHS

2004 MHL380 (rubber), 69' reach, hydraulic cab, gen-set and grapple 2004, 2005 & 2008 MHL 360 (rubber), 59' reach,

hydraulic cab, gen-set, magnet & grapple. 2003 MHL331 (rubber), 34' reach, hydraulic cab, gen-set and grapple.

1996 & 2001 MHL 331 rebuilt (rubber), 36' reach, hydraulic cab, gen-set and grapple. 1996 & 2001 RHL 350 REBUILT (crawlers), 50'

reach, hydraulic cab, gen-set and grapple 2004 & 2006 MHL 350 (rubber), 50' reach, hydraulic cab, gen-set and grapple.

2001, 2003 & 2005 MHL 340 REBUILT (rubber), 41' reach, hydraulic cab, gen-set and grapple. 1995 & 1998 MHL 350 REBUILT (rubber), 50'

reach, hydraulic cab, gen-set and grapple

LIEBHERR 2001 A934 REBUILT (rubber), 51' reach, hydraulic cab, gen-set and grapple. 2001 A924 REBUILT (rubber), 40' reach, hydraulic

cab, gen-set and grapple. 2001 A316 (rubber), 30' reach, hydraulic cab,

gen-set and grapple. 2000 R914 REBUILT (crawler), 38' reach, 4' cab riser, gen-set and grapple

2000 A904 REBUILT (rubber), 35' reach, 4' cab riser, gen-set and grapple.

1999 R934EW REBUILT (crawler), 50' reach, 4' cab riser, gen-set and grapple

1998 A922 REBUILT (rubber), gen-set, grapple

and magnet, no riser 1994 A932 REBUILT (rubber), hydraulic cab, gen-set and grapple.

ĊATERPILLAR 2005 M325C REBUILT (rubber) with 50' reach, hydraulic cab, A/C, gen-set and grapple. 2003 M320 REBUILT (rubber), 39' reach,

hydraulic cab, gen-set and grapple. SENNEBÖGEN

2004 821M (rubber), 36' reach, hydraulic cab, gen-set and grapple.

2004 825M (rubber), 42' reach, hydraulic cab, gen-set and grapple 2004 835M (rubber), 52' reach, hydraulic cab,

gen-set and grapple. 2000 830M REBUILT (rubber), 50' reach,

hydraulic cab, gen-set and grapple. COLMAR

2004 5260 AUTO LOGGER/BALER with 16.5' chamber, crane and grapple. OTHERS

2004 Big Mac portable car crusher, 3,500 hours. 2004 SIERRA T500SL shear/baler combination. 2003 SIERRA RB5000 portable logger baler. 2008 AL-JON 580CL portable logger/baler AL-JON LC90 portable car crusher. 2003 NEW HOLLAND MH (rubber), 40' reach, cab riser, gen-set and grapple.

1996 KOMATSU PC240 REBUILT (crawler), 38' reach, 3' cab riser, gen-set and grapple 1995 NORTHSHORE 2100 SE REBUILT

(stationary electric-75HP) MH, 27' reach, cab, A/C and grapple.

2002 KOMATSU PC220LC (crawler) with new gen-set and 48" magnet.

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The modern landfill: more than just a pit

by IRWIN RAPOPORT irapoport@americanrecycler.com

The design of American landfills underwent a major change when the United States Environmental Protection Agency (EPS) established new national standards for landfills in 1991 with Subtitle D. Subtitle D applies to municipal solid waste landfills, and requires them to have a composite liner system consisting of natural materials and plastics to prevent groundwater contamination.

Since then, engineers continue to make improvements on the national standards to ensure landfills are environmentally safe and provide assurances to ever increasing public opposition to the expansion of existing landfills or the creation of new facilities.

"We are seeing more use of electrical leak detection tests on the membrane portion to provide that extra security for landfill construction," said Curtis Hartog, senior technology manager with Foth Infrastructure and Environment. "In Minnesota we have 19 landfills and none of the newer Subtitle D landfills are showing groundwater contamination according to the Minnesota Pollution Control Agency, with the youngest one built in 1993.

"Most of the changes have come in quality control and assurance, with the emphasis on detecting holes in the membrane," he added. "Most landfills go through a pretty rigorous quality control process when they are constructed - that the clay is of the right density and is installed correctly and that the plastic membrane is sealed appropriately. The question is how long will the plastics last? There have been various reports that are in the neighborhood of 100 years. If that is the case, the goal is to get the leachate to a point where in 100 years it is not a threat of contamination."

All new landfills have leachate collection systems that pump out liquids for treatment or containment. The minimum thickness for clay liners is 2 feet and for areas where there is insufficient clay, a

See LANDFILL DESIGN, Page 6

Small landfills hold big potential

by MIKE BRESLIN mbreslin@americanrecycler.com

Regulatory pressure is building on those sources emitting greenhouse gas (GHG), especially landfills, particularly under the proposed EPA Tailoring Rule. If enacted, many small and medium sized landfills will become major sources and subject to New Source Review under EPA's Prevention of Significant Deterioration (PSD) and Non-attainment New Source Review programs if they expand existing operations, and will be required to obtain Title V operating permits if they do not already operate under one. Besides heavy costs for compliance, it may lead to government mandated remediation and unfunded costs.

Concurrently, the waste industry is fighting hard to exempt landfills from these new regulations because unlike industrial combustion emissions, landfill gas (LFG) is uniquely different - a naturally generated gas, predominately methane, produced by organic decomposition. It's ironic that when America is crying for energy independence and scurrying to bring more renewable energy to the grid, that landfill gas recovery has taken a national backseat to solar and wind generation, especially when you take a close look at the comparative economics.

While solar and wind are non-polluting energy sources, they do not stand on their own economically and owe their proliferation to rebates and tax incentives. The fact that they are clean may justify public investment, but without generous subsidies, not many private investors in the States would put up a dime.

On the other hand, a well engineered LFG recovery and power generation system can pay its own way, return capital investment in three to five years and continue to earn profits for decades, even without carbon credits and tax deductions that can add to profitability. By doing so, GHG emissions from landfills can be converted to energy and be added to the mix of renewables in utility portfolios.

Barry Rogers, general manager of LFG Technologies, has been converting landfill gas into energy and installing low-emission enclosed flares for over 25years. His company designs, specifies,



Generation equipment can be scaled down to small landfills, or modularly scaled up with additional engines or turbines as landfill gas flows increase.

procures equipment, constructs and starts landfill gas-to-energy projects. Rogers works with landfills that have engineered and installed a piped recovery system and then engineers and delivers turnkey projects to a performance standard.

A pioneer in this business, LFG Technologies has built over 50 landfill gas recovery projects, producing over 150 megawatts of electricity. From a GHG emissions standpoint, these projects daily consume billions of cubic feet of landfill gas. Rogers provided insight into the challenges. "Our primary focus is doing something with the gas once it is recovered, create an energy source and either put it in a pipeline or into an electrical line. The majority of our work has been in working with utilities to create electricity and put it into the grid."

Environmental zealots will argue that LFG is not green enough and should not qualify as a renewable energy source because they characterize it is as a dirtier form of natural gas, which does not qualify for renewable energy tax credits. LFG is approximately 50 percent methane with the remainder mostly carbon dioxide (CO2). It also contains nitrogen, oxygen, water vapor, sulfur and contaminants, most being non-methane organic compounds (NMOC), but these minor constituents usually constitute less than 1 percent of LFG. Nevertheless, LFG qualifies as renewable under the federal Production Tax Credit (PTC) in the same category as hydroelectric, biomass and the conversion of solid waste to energy.

The options for handling LFG are limited. It can rise into the atmosphere and add to other greenhouse gases that many see contributing to global warming or climate change. For larger landfills, EPA regulations require collected landfill gases be sent to a control device (including flaring-off the gas – thermally oxidizing gas) capable of achieving a better than 98 percent destruction efficiency.

Storing LFG is not practical unless you clean it and convert it to liquid natural gas (LNG) which limits it to typically larger landfills. Burning volatile organics to destroy them seems an obvious waste of energy albeit necessary if no alternatives to beneficially use it are available. Burning the gas to heat water or boil it to create steam for use in steam turbine power generation has limited application. Cleaning LFG so it is non-corrosive enough to put in a pipeline for end use combustion is expensive and often impractical unless near a pipeline and a user that wants it.

A more practical, universal way to monetize LFG, particularly for small and medium sized landfills is by precombustion cleaning and treatment of See LANDFILL GAS, Page 2

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A Letter from the Editor

Readers,

You've all heard the words and phrases: sweeping reform, landmark legislation, the Obama administration's signature issue, the death of America. But whatever you may call it, and some epithets are simply unsuitable for publication, the passage of healthcare reform ushered in the largest expansion of the Federal Government that we may ever witness in our lifetimes, and severe changes to the ways that we conduct our business and personal lives.

The government has spoken, and its directives are clear: purchase health insurance or be fined. Oh, and if you have more than 50 employees, purchase insurance for them as well or be fined.

This instruction comes packaged with a host of other instructions, but the basic gist of the bill is be insured or be penalized.

I don't know about you, but personally, I like the government's mentality. They've broken new ground and set precedent for permitting entities without authority to do so to have a say in the personal lives and decisions of private American citizens.

Well, I come to you today as one of those authority-less entities. As your Focus Editor in Chief, I hereby mandate that you all run out and purchased a lifetime subscription to American Recycler. If you fail to do so, I'll find you, and fine you.

Don't think I won't.

But really, it's for the greater good. There are millions of Americans with no access to timely industry news. This plan will cover them all. And the good news is that no one with pre-existing bad credit will be denied a subscription.

My awful analogies aside, I cannot help but watch with morbid fascination as these political events unfold. No one, it seems, has mixed views of this legislation. If mainstream media is any guide, this legislation has polarized Americans, who stand either firmly in support of the bill, or who rabidly oppose its implementation.

Where do you stand? Sound off online, either at American Recycler's FaceBook page, or at the main page poll. But let me know how you believe this legislation will affect you and yours.

I won't hunt you down and fine you if you don't subscribe. However, if you're interested in a lifetime subscription, I'd be more than happy to oblige you.

Dave Fournier Focus Section Editor david@americanrecycler.com

Landfill gas

Continued from Page 1

the gas and using it as fuel to power either turbines or reciprocating engines to generate electricity.

Rogers confirmed this popular option. "Our business has been growing substantially. 2009 was our busiest year to date and 2010 is expected to be better. The primary reason is we don't work with landfills, rather 100 percent with utility companies. Their driving force is to purchase a certain percentage of their output from renewable sources to meet portfolio objectives set by public utility commissions."

Rogers is very busy now only because methane recovery systems take several years to develop. "Unless the economy turns around, we are probably going to see a slowdown in our business due to low natural gas prices and lower demand for energy."

LFG to electric generation make sense for several reasons. Generation equipment can be scaled down to very small landfills, or modularly scaled up with additional engines or turbines as landfill gas flows increase, either due to landfill expansions or unexpected higher flows. A flow of only 300 standard cubic feet per minute (SCFM) with 50 percent methane can generate 800 kW of electricity. LFG Technologies, for example, has a few small projects. One at 300 SCFM consistently produces 600 kW per hour and unlike wind or solar runs 'round the clock. While systems can be as large as 40 megawatts, most are in the three to five megawatt range.

How long will a landfill continue to generate methane to make electricity? According to Mike Niemann, landfill gas program technical director for Environmental Information Logistics, a consulting firm to major private landfills operators and municipalities, "From an environmental standpoint, methane will be continually produced for 20 to 70 years or more while landfilled organic material decomposes. For economic viability you are realistically looking at 30 to 40 years. I've been working on some facilities that have been beneficially recovering landfill gas for over 20-years and are still going strong despite the landfill being closed."

Surprisingly, not all landfills tapped for methane have diminished flow over time. LFG Technologies uses planning tools, but mostly relies on experience to evaluate the economic viability of LFG to energy projects. "There are so many variable factors we have to be extremely conservative in our estimates. Because of the risk structure you have to be able to recover your investment in 5-years," he emphasized. "It's always easy to expand the equipment."

EPA regulations are somewhat elastic, have opt-outs and loopholes when it comes to mandating when an aggregate gas collection and control system must be installed in a landfill, but generally the tipping point is anywhere from having two to two and one-half million tons of solid waste in place.

"EPA does provide various control options, but several thousand landfills flare-off the gas to some degree or another. It's the most predominate and cheapest form of control," said Niemann. Once mandated, however, the landfill is unable to claim carbon credits or trade them because the carbon offset market is based on voluntary emission reductions. However, if the landfill uses LFG to generate electricity they may be eligible for IRS Section 45 tax credits at \$10 per megawatt hour, and perhaps renewable energy credits (RECs) depending on state and region where the landfill is located.

"Given that there are over 7000 landfills in the United States and only about 500 energy recovery facilities, the potential is quite large, but economics play a big role in the development of viable projects at smaller facilities. Capital expenditures can be quite large and once a landfill closes its potential gas production declines. Micro turbines have been shown to be reliable, but they still are expensive," said Niemann. That's why LFG Technologies usually recommends reciprocating engines to generate power rather than turbines. The capital cost is much lower and payback more assured.

EPA's Landfill Methane Outreach Program (LMOP) currently lists only 509 operational projects generating 1,563 megawatts of electricity and 304 million standard cubic feet of gas per day (MMSCFD). They also list 530 landfill candidates with the potential to produce 1,170 megawatts and 15.5 MMSCFD. There's huge opportunity for greater gas to energy projects. Private investment and development companies are willing to front the capital costs to build systems in return for the carbon credits and a share in the ongoing electric production, even for small and medium sized landfills.

"Whether flaring it or combusting it in an engine to generate electricity, you eliminates greenhouse gases. You change it into other compounds that are different, but you eliminate volatile organics from going into the air," said Rogers.

The Law of Conversations of Mass states that for any chemical process in a closed system, the mass of the reactants must equal the mass of the products. It's all going someplace anyway. There is no perfect way to handle greenhouse gas emissions from landfills, but as long as EPA regulations lead to flaring-off the methane, landfills may as well productively use that energy to generate electricity.

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Metro announces new operator for transfer station

For the first time since it opened in 1990, operations at the Metro Central solid waste transfer station are changing hands. Metro and Recology Oregon Recovery Inc. have signed an estimated \$38 million, 7-year contract that will signal considerable changes for the northwest Portland facility that takes in trash and recyclables from commercial waste haulers, businesses and residents.

Following a thorough evaluation by an interagency evaluation team, Metro determined that Recology had the best and most competitive proposal to manage Metro Central. The decision to award the contract to Recology was based primarily on its guarantee to double the rate of materials recycled, the company's robust sustainability plan, which includes reducing its carbon footprint and improved opportunities for employees at the station – all without significant increase in costs.

Recology initially plans to employ 46 workers, but that number will likely rise to 59 as activities increase. The pay for entry level positions will be higher than current pay levels at the station, and Recology will provide health benefits as well as community service days for employees. The contract with Metro also requires Recology to work with vendors that are either local, third-party certified (such as the Green Seal for environmental standards) or members of the Minority, Women, and Emerging Small Businesses Program.

While residents who have their garbage and recycling picked up at the curb will not see any immediate changes, and Metro expects little to no impact on disposal rates, modifications will be made to improve services at the station to allow Recology to double the current rate of recycling from 17 percent to 34 percent by the end of the first year of operations, and to 40 percent by the end of the contract in 2017. Stepping up the recovery of cardboard, wood and metal will make up much of that increase. Recology also plans to accept new materials at Metro Central, including asphalt roofing and clean drywall.

In the agreement with Metro, Recology has outlined aggressive plans to improve sustainable operations for the transfer station and to cut greenhouse gas emissions to become carbon-neutral by 2015. The plans include running the station solely on wind power purchased through PGE's Clean Wind program and implementing an energy efficiency plan for the facility. Changing traffic flow and some handling of materials will reduce vehicle idling and the use of B5 biodiesel and diesel catalytic converters on equipment used on site will cut down emissions.

Recology will also look at reducing water usage and replacing toxic solvents and lubricants with more environmentally friendly ones. Metro requires Recology to monitor and

For the first time since it opened 990, operations at the Metro Censolid waste transfer station are nging hands. Metro and Recology gon Recovery Inc. have signed an

> Recology is one of three companies that submitted proposals to run operations at the regional solid waste transfer stations owned by Metro. Allied Waste Transfer Services of Oregon, LLC, the current operator of both Metro transfer stations, and Green-Waste Zanker also submitted proposals.

The agreement with Recology involves only operations at Metro Central. In the past both transfer stations were managed by one company, but Metro determined that since the two transfer stations are different in design and operation that it would be more effective to separate operations. Central's size and layout offers more opportunities to recover and recycle materials, while the layout of Metro South makes it less flexible, limiting options to expand recovery at the site.

Metro expects to complete a contract on its South Station in Oregon City soon; a notice of intent to award operations to Allied Waste has been filed. The current contracts at both stations expired March 31, 2010.

For additional information, view this article on www.AmericanRecycler.com.

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- that bales 40-50 tons/day of industrial and post-consumer plastics and non-ferrous metals, including aluminum, tin and low-density polyethylene (LDPE).
- that since a mid-2009 installation, has provided Cougle's with near 100% improvement in cycle time, a 10-15% improvement in bale density and has saved 30% in operating costs.



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by MARY M. COX

maryc@americanrecycler.com

The use of truck tarp systems in the waste industry isn't just a good idea – in many areas of the United States it is the law. Debris that escapes from any type of mobile, loaded truck can present an undesirable situation – the debris can be dangerous to others or it can be cited as littering, amongst other concerns.

Bill R. Jones, sales manager, believes that waste tarp systems offered by Pioneer Coverall are unique to the industry due to ease of use, dependabil-



ity and overall high quality. Challenges that may often be involved with waste application tarps are eliminated through the use of either the Pioneer or Mountain brand, according to Jones, the firm's outbound sales/marketing manager.

"Our systems eliminate the necessity for the user to board the container to help make tarping the load quicker and safer. Driver safety is the number one concern in the process of tarping a load. Another top concern is containing the waste within the appropriate space on the truck. Our rack-n-pinion system addresses this by including tarp side flaps, which allows the use of tarp straps in ensuring load containment.

"We offer a side-flip system for that situation. Our side-flip tarp contains the entire trailer with push-button operation from the ground, allowing the driver to be clear of the load. This also dramatically reduces time used for tarping waste. The side-flip system weighs less than 500 lbs., offers bolt-on installation, and operates using self-contained hydraulics, or it can be plumbed into a truck's hydraulic system, depending on client preference," Jones said.

He described Pioneer's rack-npinion tarp system as "utilizing technology that provides controlled side arm movement. A hydraulic cylinder moves a rack gear forward and backward in combination with a pinion gear attached to the base of the pivot arm. This configuration creates a mechanical advantage, model has a three-year motor warranty providing constant control over speed while the motors on the semi-automatic LINE can be specified on new vehicles

and precise synchronization of the pivot arms as they cover and uncover the container."

The system covers a wide range of container lengths and heights for roll-off trucks, and is available with a new "grass-hopper" arm extension, enabling even better coverage of short boxes. Jones added that the Pioneer product also provides a stationary gantry option when the application is for same height but different length containers. Either option includes a Rollmaster roller assembly – a unique, spring-loaded

roller assembly that allows a heavy duty tarp to be rolled over the load without touching it, thus eliminating "drag through" – an effect that can damage a tarp.

Roll-Rite is a manufacturer of American-made electric tarp systems and components for work truck and trailer transportation. Roll-Rite's patented gear motor technology offers a variety

of specialty applications that increase efficiency, productivity and safety.

Jim Kenyon, vice president, sales & marketing said, "Our new system for roll-off and hook lift container trucks in North America, the PaceSetter, will revolutionize the tarp product industry."

The arms of the product are mounted on the tower – out of the way of containers that can bend or break an arm when the container is lowered. The PaceSetter takes less than five hours to



install – a significant improvement over the typical 18 to 25 hour installation time of products offered by other companies.

Roll-Rite's DC-Series of products for roll-off trucks and trailers (including hook lifts and luggers) includes three different models: an electric-overmanual (DC100 model), semi-automatic (DC400 models) and an automatic (DC300 models). The DC100 and automatic models have a five year warranty.

Kenyon commented, "We see maintenance and safety as the primary chal-

lenges for tarps used in the scrap, demolition and solid waste industries. Roll-Rite eliminates many of these challenges with innovative features – our systems are highly durable yet lightweight and easy to install, with the least expensive parts on the market. We were the first to add

a wireless remote control on systems for detachable containers (the DC-Series), which is safer to operate. Our systems are independent of the hoist system, which means a product is not hooked to existing truck hydraulics."

The company's Transfer Trailer Systems have two models, a front-toback (FTB) and a side-to-side (STS) roll tarp style. Their STS system reduces installation time and weight over other products on the market. The FTB system can be fitted with a patented knuckle arm (reducing the height needed when covering or uncovering a load) and can also include a high-capacity tarp spool housing for trailers up to 53 feet long.

Shannon Harrop is the national account director at tarpARMOR[™], a division of Southwestern Sales Company. Harrop said their Fall Protection System keeps collection and maintenance workers safe on top of trucks.

'Our System includes Bi-LINE® Fall Restraint, safeMOUNT[™] Ladder Assist and Expandable Garbage Gear[™] (EGG) features. The EGG tools reduce the need for operators and maintenance workers to climb onto trucks. Instead, they can clean cab shields, tarp loads and perform other jobs from ground level. The safeMOUNT Ladder Assist and Bi-LINE Fall Restraint

Roll-Rite, LLC products enable workers to safely access and work on top of front, side or rear loaders, and transfer trailers - without the risk of falls," explained Harrop.

He said the Bi-LINE Fall Restraint is the centerpiece of the Fall Protection System and consists of two parallel restraint lines, permanently mounted to the top of the vehicle body. A dual lanyard connects to the restraint lines and a comfortable belt worn by the operator.

Harrop said, "The low profile Bi-





Tarping systems

tarpARMOR

handrail extension that rises above the top of the ladder and vehicle. The bolton device allows operators to maintain three points of contact before connecting to the Bi-LINE Fall Restraint. When not in use, safeMOUNT retracts out of the way, next to the ladder."

The EGG line also includes a number of tools that can be used to safely clean and maintain vehicles from ground level or above. Two expandable reaching poles can be quickly fitted with various attachments, including the truk-BRUSH[™], a combination brush and scraper, and the tarpTAMER[™] attachment – a multifunction hook used to position tarps and secure bungee cords, without climbing onto the truck. The trashTONG[™] can be used to reach loose or bagged trash in areas that are normally inaccessible.

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DEP approves Bedford landfill environmental assessment

The Department of Environmental Protection (DEP) has approved the first phase in its evaluation of the proposed Sandy Run Landfill expansion in Broad Top Township, Bedford County, Pennsylvania.

By approving the environmental assessment, DEP now moves to the technical review phase in its evaluation of the project that would expand the landfill by 22.3 acres and extend its life expectancy by nearly 10 years.

"A thorough assessment did not identify any significant environmental or quality of life impacts associated with the proposed expansion," said DEP Southcentral regional director Rachel Diamond. "The waste management program will now proceed with a technical review of the project's design."

Sandy Run Landfill is currently in compliance with the terms of its operating permit and has a permitted average daily waste volume of 750 tons and a maximum daily volume of 900 tons. The company also is proposing to install leachate recirculation and active gas extraction systems to better manage the byproducts of its waste disposal operation.

DEP regional staff held a public meeting and hearing on the proposed expansion last June.

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"THINK GREEN, BE GREEN, MAKE MORE GREEN"

Landfill design

Continued from Page 1

geo-synthetic clay is utilized. The plastic membrane is considered to be the primary containment system.

"If you have a leak," said Hartog, "it still has to penetrate the clay liner, which is very tight and it takes a long time for the liquids to penetrate it."

Dr. Tim Townsend, a professor of Environmental Engineering at the University of Florida, is a leading researcher on landfill design, technologies and processes to clean up and extend the lifespan of landfills. He is conducting research on bioreactor technology to help speed up the decomposition process.

"A big component of the waste in municipal solid waste landfills is biodegradable and if you operate it in a manner where you enclose it, the waste won't decompose rapidly," he said, "but

there are techniques that operators can use to treat a landfill more as a treatment system than as a storage system. It is similar to composting or anaerobic digestion.

"When waste undergoes biological decomposition, it converts to biogas and a stabilized residue," he added. "You would much rather have all of these biological processes occur when the landfill is relatively new and in prime shape, as opposed to decades or centuries from now. We haven't been using lined landfill technology long enough to truly know how these systems will perform in the distant future. So it is much better to control and treat the waste soon after it is placed. When this process is undertaken and you hopefully have captured all the methane and converted it into some energy product, you have a stable landfill that should pose much less environmental harm and risk in the future and you opened up more airspace to fit in more waste."

A Closer Look by Donna Currie

Rudy Maldonado, Jr. • 303-776-9013

G&M Disposal in Longmont, Colorado, is undoubtedly a family company. Rudy Maldonado, Jr., the operations manager, said that six of the ten employees are family, including his parents, his brother and sister, and his sister-in-law. He said the small staff offers an advantage over larger operations, since customers get to know the G&M staff better.

The staff also makes it a point to get to know the customers. Maldonado said that when they have a commercial customer, they do business with that customer, whether it's a gas station, grocery store or other local business.

G&M has been in business for just over 23 years, and was started by Maldonado's father, Rudy Sr., who saw that there were trash companies in the area that were coming and going. At the time, he was working for a trash company that "looked like it wasn't going to be around much longer," and he decided to start his own business. His goal from the beginning was to start a company that would stay in business for a long time.

Maldonado said that the key to success is to "show the customers they are number one," because without customers, there is no business. He said that everyone who answers the phone at G&M can get an answer right away when a customer has a question.

Like others who grew up in a family business, Maldonado said that he started working for the company when he was young. "When everyone else was on summer break, I was riding on the back of a trash truck," he said. But it was more than just a summer job. "I did it because I have a love for the business."

Now, he's usually not riding on the back of a truck, although he does fill in wherever he's needed, including driving a truck. "I don't mind driving," he said. "I don't have a problem with any of the jobs." But his favorite part is sales work and talking to customers on the phone.

Like many other trash haulers across the country, G&M Disposal handles more than just waste. The company handles recyclables that go to the county's recycling center in Boulder, along with the commercial, residential and construction waste that goes to a landfill in Denver.

"They're pushing recycling really hard," Maldonado said of Boulder County. "We do our part on the recycling. The other big push to recycle more is the rising cost of landfills, which is a constant challenge. "

Maldonado said that the county is very stringent about making sure trucks are inspected regularly and that licensing is up to date. But he sees that as a positive thing rather than negative. Even though regulations are stricter than before, "they're good to work with. We call them, and we get answers back from them."

A recent addition to the G&M fleet was a roll-off truck purchased about five years ago. Now, the company has about 50 roll-off boxes for that one truck to service. But the future holds more than new equipment. Maldonado would like to convert his fleet to run on natural gas or biodiesel some day. "Why not go the next step? If we're going to be recycling, why not fuel?" He said that although it would be expensive to convert the vehicles, it would save on pollution and be better for the environment. "I think it would be a big step for a small company."

But more than the environmental accomplishments, Maldonado is most proud that the company has achieved his father's original goal that, "we've been around this long." When the company was first starting out, customers would ask, "Are you sure you're going to be around?" Now, they don't need to ask. "A lot of people believe in us, because we're still here."



Modern landfills are marvels of technology. They are designed from the ground up with safety first and foremost in mind, and the construction is carefully monitored to ensure that rigid specifications are met.

Townsend noted that while the technology has been studied, "it needs fullscale practice and implementation to work out the all the bugs to apply this technology on the large scale of an operating landfill, to control the process in the most environmentally safe manner, and so that an operator can afford to do it as safely and economically as possible."

Hartog has been testing bioreactor technology in landfills in Iowa to help reduce the threat of possible contamination, a concern that is shared by state officials. While dry entombing the waste is an option, Hartog said re-circulating leachate at landfills is becoming more common to help degrade the waste.

"By purposely putting liquid into the waste – the waste degrades and the leachate becomes less of a threat because the leachate 'strength' is reduced by re-circulating it back through the waste," he said. "In 100 years, if there is a hole, and the leachate is weak, the threat of groundwater contamination is reduced."

It may be possible to retrofit individual landfills to apply bioreactor technology. Hartog said that landfills, which his firm designed nine years ago, were planned with bioreactor treatments in mind. Foth tested a bioreactor process in Linn County, Iowa from 1998 to 2008, a county where it just completed a landfill gas project to and hopes to generate green power.

"Not all state regulators are comfortable with this process yet," he said.

Hartog said that some states like Wisconsin are more proactive than others in terms of landfill design, but each state has concerns unique to their situations. Minnesota, for example, currently has a moratorium on new landfills, with existing landfills being allowed to expand only if the application is approved, purportedly in order to protect their water sources. And while Minnesota is concerned about the affect of landfills on its water resources, in California, siting concerns include seismic conditions.

A major issue affecting landfills is what to do with coal combustion ash from power generating facilities. "They either dispose of the waste or reuse it to make cement and bricks. But some of it is disposed of in landfills because the economics of reuse are just not there and because of that, it's a lot tougher to site those landfills," said Hartog.

"If not into a landfill, some facilities place the ash into ponds," he added. "The Tennessee Valley Authority had an ash impoundment that burst and caused a lot of problems. In response, the EPA has promised to come out with new rules on how to manage ash (coal combustion residue)."

The ash problem is just one facet of the NIMBY problem that is making it difficult to secure public approval to build new landfills or expand existing facilities.

"It's a really huge issue in most of the areas we work in," said Hartog. This is not just an American problem. Several years ago in Ontario, the residents of Kirkland Lake rejected a proposal to convert a former open pit mine into a landfill for the City of Toronto's solid waste.

Hartog noted that some cities do allow expansions of existing landfills, but that they must close by a specified date, and that many restrictions are imposed. He added that while residents can point to past examples of landfills that have caused environmental problems, having new technology and designs does not always win over minds.

"We have seen at meetings that the public does not distinguish between new and old landfills. Rather, they lump them all together which isn't fair to the newer landfills," said Hartog. "But it really isn't about safety, risk or engineering issues. It's an emotional issue. People say, 'I don't want it here, build it somewhere else.' We just ran into that with a solid waste transfer station. It didn't matter how safe it was. Political careers have ended over landfill sitings."

Some opposition to new landfills is based on the facility being constructed to accept out-of-state trash. But such shipments cannot be stopped by states due to the federal inter-state commerce clause. New York City exports its trash and even Minnesota sends trash to Iowa and Wisconsin.

According to Hartog, the solid waste industry does take landfill safety seriously, and that best practices and technological developments are generally shared by companies and engineers, with research conducted by Dr. Townsend and Dr. Craig Benson at the University of Wisconsin playing a critical role in providing information needed to design state-of-the-art landfills. National, regional and state conferences held by the Solid Waste Association of North America help to keep regulators, engineers and companies abreast of the latest developments.

"Waste Management and other private companies do a good job at engineer-See LANDFILL DESIGN, Page 7

Waste Management invests in Enerkem to further goals

Waste Management, Inc. and Enerkem Inc. have announced a strategic investment by Waste Management in Enerkem, as part of Enerkem's new financing round.

The closing of this new round of financing which generated approximately \$66.5 million comes from Enerkem's existing institutional investors, Rho Ventures, Braemar Energy Ventures and BDR Capital as well as from new investors, Waste Management and Cycle Capital. The new funds raised will be used to support Enerkem's growth plan, including initiating the construction of its second waste-to-biofuels plant.

Enerkem's thermo-chemical technology helps convert waste materials into biofuels such as ethanol.

"We want to extract more value from the materials we manage than anyone else in our industry through new and emerging processing and conversion technologies," said Tim Cesarek, managing director of organic growth at Waste Management. Back in December 2009, Enerkem was awarded \$50 million in funding by the United States Department of Energy for the development of its planned Mississippi plant. Its commercial-scale demonstration facility, located in Westbury, Canada, reached more than 1,000 hours of operation.

The new funds raised will be used to support Enerkem's growth plan, including construction of its second plant, in partnership with the City of Edmonton and Alberta Innovates. The investment in Enerkem complements Waste Management's comprehensive waste services in the areas of recycling, landfill, waste-to-energy and landfill gas-to-energy. This investment will also help move Waste Management toward meeting three of its sustainability goals: doubling its renewable energy production and tripling the amount of recyclables processed by 2020, and investing in emerging technologies for managing waste.

Landfill design

Continued from Page 6

ing their facilities to protect groundwater," he said. "Each landfill is surrounded by groundwater monitoring wells to make sure that the containment integrity is maintained and if there is contamination, they have to do something to remediate it. We try to do state-of-the-art design, but sometimes we are constrained by the location of the landfill."

Foth recently engineered the transfer of the material from an old landfill in Lacrosse, Wisconsin to a new landfill to mitigate a potential environmental risk.

"It was costly, but it's pay me now or pay me later," he said. "In some cases we don't know what is inside a landfill, but the important thing is that the material needs to be in a lined facility. We'll be seeing more waste relocations in the future. A lot of those older facilities were a lot closer to towns and development occurred around them. It's really a risk management issue for counties and cities because the invest-

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ment of removing the trash can be less compared to providing water to citizens, or trying to collect and clean up groundwater."

Incinerators help to reduce the amount of waste going to landfills, as do waste-to-energy plants, but Hartog said these solutions also creates the problematic ash waste that needs to be disposed of, which requires strict quality control and checks for engineers and construction companies that design and build landfills.

"From a design standpoint," he said, "there are prescribed components that must be in the design. During construction there are a series of checklists, forms and data that we have to gather. After Subtitle D went into effect, the checklist system got better. It's more standardized in terms of the sequence, what you have to check and how frequently you have to check the materials, but it takes a pretty experienced field person to get it right because there is a lot of data you need to gather on these projects."

Townsend and his students are also studying what happens to the soil beneath the clay liners of landfills and how the change over time compares to what the engineers predict during the design phase.

The plastic liner is considered the primary containment system. Should that rupture, however, any leachate

would still have to penetrate the hard clay liner beneath it, meaning that contamination risks are slight.

"It's very important from an engineering and design perspective," he said. "There are standard engineering procedures that we go through when a landfill is constructed to determine how the subsurface soils are going to respond. At one site we have installed instruments beneath the liner system to monitor the changes over time."



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