Kansas Department of Health & Environment

Solid Waste UPDATE

Vol. 14 No. 1 March 2009

In This Issue . . .

Salina's Solid Waste Landfill 1
Tornado Debris Generation and Management 1
Top Ten HHW Facilities 2
Complying with "Cover" 2
Alcoa Bin Program 3
Weathering the Economic Storm 3
"Dry Tomb" MSW Landfills 4
Seward County Receives EPA Award 4
Get to Know KDHE Solid Waste Staff 5
HydraSleeve Groundwater Sampler 6
New Grant Opportunities 7
Calendar Items 8

Get Caught!™

Tornado Debris Generation and Management in 2008

by Bill Bider, Director, Bureau of Waste Management

Numerous tornado outbreaks occurred in Kansas during 2008 with the most devastating outcomes occurring on the night of June 11, 2008 when an EF3 tornado swept through Chapman and minutes later an EF4 hit a section of Manhattan before weakening as it went through the Kansas State University campus. While some debris was generated by less severe storms in other locations, major response and clean-up efforts were needed in these two communities. KDHE was very active in helping establish the debris management plan in Chapman; however, local government officials working with private landfills and other contractors independently handled most of the Manhattan response.

Debris segregation plans were implemented in both communities including the separation of trees and brush that could be burned, white goods (appliances), household hazardous wastes (HHW), electronic wastes, and municipal solid waste such as food, clothing, etc. The remaining debris was all classified by KDHE as construction and demolition (C&D) waste which could be disposed of in nearby private C&D landfills. Some asbestos-containing materials were segregated from some structures and some debris that contained "suspected" asbestos was managed wet to avoid any potential airborne exposures. The amounts of waste collected were significant, but less than anticipated.

KDHE does not have precise data on the

(continued on page 4)

Salina's Solid Waste Landfill

A Model Subtitle D Facility in North Central Kansas

by Mike Selm, Bureau of Waste Management

The City of Salina has been proactive in making significant improvements in the mapping, construction, and operation of their municipal solid waste (MSW) landfill. The landfill was originally permitted in 1976. In 1994, the permit was amended to construct the city's first Subtitle D cell to bring the landfill into compliance with federal regulations which took effect October 9, 1993. From 1995 to 2003, the permit was amended several more times to: (1) add new Subtitle D cells; (2) show compliance with location restrictions, operational standards, and closure and post-closure care planning requirements; (3) increase final elevations; and, (4) add a construction quality assurance (CQA) plan. In April 2008, ownership documents were researched and an updated facility plot plan was prepared.

The landfill facility encompasses a total area of 657 acres (280 acres are permitted for disposal).

(continued on page 6)

Top Ten HHW Facilities

Based on Volume of Waste Managed in Fiscal Year 2008
Data source: 2008 HHW Annual Report

No.	Facility	Service Area	Total Lbs. Collected	% of Total HHW collected statewide
1	Wichita	Sedgwick County	974,815	23.0%
2	Big Lakes Region	Riley, Pottawatomie, Clay, Dickinson, Morris, Geary, Wabaunsee, Washington, Marshall,and Nemaha Counties	893,399	22.1%
3	Johnson Co.	Johnson County	537,046	12.7%
4	Lake Region	Franklin, Osage, Miami, Coffey, Anderson, and Linn Counties	213,313	5.0%
5	Shawnee Co.	Shawnee County	194,329	4.6%
6	Cit of Olathe	City of Olathe and Johnson County	193,911	4.6%
7	City of Lawrence	Douglas County	170,418	4.0%
8	Leavenworth County	Leavenworth Conty	98,948	2.3%
9	City of Salina	Saline, Ellsworth, Lincoln, and Ottawa Counties	98,053	2.3%
10	Ellis County Regional	Ellis, Russell, Rush, Trego, Gove, Sheridan, Graham, Rooks, Philips, Decatur, and Sherman County	95,640	2.3%

photo courtesy of John Charlton, kgs.ku.edu

KDHE Mission:

As the state's environmental protection and public health agency, KDHE promotes responsible choices to protect the health and environment for all Kansans.

Complying with "Cover" A Constant Challenge

by Rebecca Wenner
Bureau of Waste Management

Most landfills in Kansas are required to periodically cover the waste. Proper cover minimizes birds, odors, and fire hazards. It can also lead to better relationships with neighbors, fewer complaints, and better compliance.

Construction and Demolition Landfills (CDL) are required to add cover every 2,000 tons of waste (or at a minimum every 120 days, but not more than once a week). The cover at a CDL must be a minimum of one foot of soil that limits air intrusion to control the risk of fire, controls litter, and limits vector harborage. If waste is protruding through the cover, it is not meeting the first requirement of limiting air intrusion. Therefore, the one foot of soil is a minimum. Poorly compacted and/or bulky waste may require more than one foot of cover to meet the regulatory requirements. CDLs must also maintain a log of the dates on which cover is applied.

All municipal solid waste landfills (MSWLF) including small arid landfills (SAL), must apply daily cover (a minimum of 6 inches of soil) on all exposed waste at the end of each day of operation. Daily cover must meet the following requirements:

- prevention of blowing debris;
- minimization of access to the waste by vectors;
- minimization of the threat of fires at the open face;
- minimization of odors; and
- shedding precipitation.

Daily cover can have minimal amounts of waste protruding (flagging) and still meet these requirements, however, the waste must not be blowing or causing odors.

All MSWLFs (including SALs) must also apply intermediate cover to

(continued on page 7)

Alcoa Bin Program

by Debra Hoepner, Kansas Organization of Recyclers

Kansas Organization of Recyclers (KOR) is a state affiliate member of the National Recycling Coalition (NRC), and as a membership benefit provides free individual memberships in NRC to all KOR voting members.

NRC has partnered with Alcoa to provide 22,000 recycle bins to NRC state affiliates in the first quarter of 2009. KOR's members recently had the opportunity to apply for these bins. KOR applications were submitted to NRC for 1,860 bins as follows:

110 bins - Cloud County
500 bins - Green Express Studio
300 bins - Kansas State University
800 bins - NW Kansas Recycling Organization
50 bins - Solomon Valley E-waste Coalition
100 bins - Washington County

Alcoa anticipates additional bins will be available later in 2009, and KOR member applications will again be accepted. For the past two years, NRC has also partnered with Coca-Cola in a bin program to members.

KOR is pleased to provide these NRC affiliate benefits to our members. KOR will publish a KOR Members Directory, available ONLY to KOR members, in February 2009. The KOR membership form can be downloaded from our website, www.kskor.org (Members page), or you may request membership information via e-mail at kskor@cox.net or phone at 316/722-0919.

2009 works!
CONFERENCE ON RECYCLING, COMPOSTING, AND HOUSEHOLD HAZARDOUS WASTE

March 24-26
Lindsborg
Kansas

Working for a Sustainable Kansas
Composting
WORKS! 2009
Recycling
15 Years & Beyond

kdheks.gov/waste/works09

Weathering the Economic Storm

Tips for Recycling Business

by Arthur Fink, Bureau of Waste Management

Economic news seems to be all around us these days. Failed banks, government bailouts, growing unemployment, and dropping commodity prices. During these trying times, businesses, especially those dependent on commodity markets like recyclers, need to be prepared to make changes to their operations. The following tips provide some food for thought to companies looking at ways of reducing their bottom lines to weather the economic downturn.

- **Keep your facility clean and organized**. Storing material in hopes of selling it when markets rebound is a tactic used by many recycling businesses. A clean and organized facility will allow you to maximize storage and keep housekeeping interruptions to your business operations at a minimum.
- **Re-evaluate any plans for expansion**. Expansion is certainly an exciting prospect for any business. However, with the current economy slowing down sales, money that is slated for expansion might be better served to cover operating costs during rough times. Evaluate all options carefully.
- **Shop around**. Just because you may have a long-standing relationship with vendors or customers doesn't mean you're always getting the best deals. Look at all outlets, including international ones, when buying or selling products.
- **Reduce Less Than Full Loads (LTLs) coming from your facility**. Waiting until you have a full load to transport will often mean better price breaks on transportation costs as well as increased profits when selling recycled commodities. Consider consolidating material with other businesses to maximize your shipping efficiency.
- **Streamline your workforce**. Layoffs may be a product of a slow economy, but they don't necessarily spell bad news for your business. Laying off underperforming employees can save you money and increase operational efficiency. In return, think of low cost ways to reward superior employees. Extra vacation time, recognition dinners, and flexible work hours are just a few of the options to consider.
- **Review your current business plan and create a "survival" plan**. Examine your business operations closely and try to understand the worst-case scenario that could happen. Once you have a firm grasp of your business vulnerabilities, you can plan a course of action for troubled times. Business consulting organizations, such as the Small Business Development Centers of Kansas, can provide low cost consulting and help you identify weaknesses in your business and achieve your business goals.

Are "Dry Tomb" MSW Landfills Best from a Long-Term Perspective?

by Bill Bider, Director, Bureau of Waste Management

For the past 20 years, states have followed EPA's regulatory lead and required design and operational practices that minimize the amount of liquids that enter municipal solid waste (MSW) landfills. Current Subtitle D regulations were developed to keep water out during the operational period and after closure by minimizing stormwater run-on and by constructing low-permeability final covers. The goal of producing dry landfill cells that generate little leachate and reduced amounts of landfill gas may have been short-sighted. While the active processes within the landfill may slow and even appear to "turn off" by drying out the waste, the landfill has not truly reached a stable or inert condition. The day will come in virtually every landfill when the liners and caps fail, and the landfills reawaken to become an environmental problem for some future generation.

Over the past few years, some "bioreactor" landfills have begun operations to promote early waste degradation though none are yet operating in Kansas. Some states, such as Wisconsin, are now incorporating requirements into their regulations to stimulate waste degradation during active operations and the post-closure period. The Bureau of Waste Management (BWM) believes it is time to re-evaluate landfill design and operations to achieve a higher degree of waste stabilization than achieved by the "dry tomb" methods currently being used.

This goal is long-term because it is a major shift in philosophy. Depending upon whether enhanced biodegradation would be voluntary or mandatory, it may be necessary to revise laws and regulations, and anything we do in Kansas must be consistent with the federal MSW landfill requirements. BWM has been working with the U.S. EPA to receive approval to implement the flexible MSW landfill permitting allowed by the federal Research Demonstration and Development (RD&D) rule. This would give KDHE clear authority to approve of alternative design and operating practices that allow more liquids to enter MSW landfills to enhance biodegradation. While BWM has already approved of some alternative final covers, the intent has not been to increase liquids addition and enhance biological activity.

(continued on page 5)

Seward County Receives EPA's 2008 LMOP Community Partner of the Year Award

When it comes to progressive and practical waste management solutions, Seward County Landfill, under the leadership of Mike Tabor, is a model for us in Kansas and the entire USA.

Located in an arid part of the state, and with 70 cfm of landfill gas, they persevered to find a beneficial use for this methane. KDHE recognized this effort and nominated Mike Tabor and Seward County Landfill to EPA for the Landfill Methane Outreach Program (LMOP) Community Partner of the Year Award. On January 13, 2009, the 2008 Community Partner of the Year was awarded to Seward County Landfill.

Tornado Debris *(continued from page 1)*

amounts of waste generated by the Chapman and Manhattan tornados; however, we can provide some information to help others understand how much waste may be generated through such events. The amounts of HHW, electronic wastes, and white goods were relatively minor and were able to be managed through existing county or regional collection programs. In Chapman, the Big Lakes Regional HHW program provided a valuable service to collect and dispose of HHW that had been separated by property owners and moved to the curb. The county collected most white goods and electronics for recycling; however, over 200 tons of appliances and other recyclable metal did end up at the Blixt construction & demolition landfill located just a mile east of the city. The Blixt site was the primary disposal site for most trees and brush and nearly all C&D waste. A total of about 9,000 tons of C&D waste was taken from Chapman to the Blixt landfill for disposal. In addition, over 13,000 cubic yards of trees and brush were taken to the Blixt site to be burned. A couple thousand cubic yards of brush was also taken to the Dickinson County solid waste facility in Abilene for burning.

The debris generated in Manhattan was disposed in two nearby C&D landfills: Acres of CD Landfill and Tarkio CD Landfill. The combined quantity of disposed C&D waste was reported by the landfills to be about 2,100 tons. No data was received by KDHE on the amounts of other debris types generated in Manhattan.

Many cities and counties have developed or are developing debris management plans. These examples are helpful in understanding the amounts and types of waste that are likely to be generated.

Ambassadors Needed !

College Students !

Become a Green Ambassador*

- take your message of environmental stewardship to groups throughout Kansas
- emphasize good personal decision-making regarding waste management

***A KDHE/BWM program**

2008-09 Green Ambassadors

"Dry Tombs"

(continued from page 4)

In preliminary discussions with landfill owners, it appears that there may be some interest in pursuing alternative practices to enhance biodegradation. Following EPA's anticipated approval of KDHE to implement the RD&D rule, BWM intends to prepare a policy paper in the near future on this subject to establish short- and long-term goals. We also expect to open a dialog with industry stakeholders to gather opinions on how to move forward. If you have a current opinion on this subject, please contact me in writing by e-mail (wbider@kdheks.gov) or by U.S. mail.

KANSAS Green Team

Get to Know KDHE Solid Waste Staff

Christine Mennicke

Chief
Regulations and
Data Unit

Position in KDHE/BWM:	Chief of the Regulations and Data Unit since 1996
Birthplace:	Milwaukee, Wisconsin
Professional/Academic:	Licensed Professional Geologist BS in Geology & German, Univ. of Wisconsin-Madison MS in Geology, University of Wisconsin-Madison
Other Job Experience:	Instructor of Geology, Northwest Missouri State University 1986 - 1991 Research Assistant, Kansas Geological Survey 1991-1994 Environmental Geologist, KDHE/BER 1994-1996
Family:	Married Scott O'Neal in 1988 Two sons: Alan (15) and Colin (13)
Influential Person(s):	My parents who are still role models for me
Favorite pastimes:	Knitting, gardening, reading, watching old movies, playing musical instruments
Favorite food:	Vegetarian fare from Free State Brewery in Lawrence
Favorite books:	Kristin Lavransdatter, by Sigrid Undset Pride and Prejudice, by Jane Austen Ladies of the Club, by Helen Hooven Santmyer
Recommended vacation destinations:	Yellowstone National Park (early in the year before the crowds show up) and New Zealand
Little known fact:	My grandfather was friends with Claus von Stauffenberg (played by Tom Cruise in the movie "Valkyrie")

Salina *(continued from page 1)*

Approximately 109 acres have been filled to date leaving 171 acres of remaining capacity. The facility plot plan, prepared by licensed professionals, includes concise data regarding property lines, rights of way, easements, buildings, structures, and locations of existing and proposed waste disposal units (cells).

The facility, which currently accepts between 250 and 326 tons of MSW per day, has an estimated remaining operating life of 70.5 years. Waste is hauled to the landfill from multiple counties including Saline, Ellsworth, Lincoln, McPherson, and Ottawa. In addition, the city collects and recycles scrap metal, glass, plastic, newspaper, and magazines.

Since 2003, the landfill has been proactive in developing and implementing a CQA plan, which has promoted more efficient and high quality construction methods to construct the low permeability liner for new cells. Such initiative involves the construction of a test pad in which liner soils are kneaded, compacted, and tested to make sure that the liner meets performance criteria. A major improvement in the testing of the clay liner for low permeability is the use of the Boutwell Test, which is a full scale, non-destructive test that does not impair the integrity of the liner system, as did other types of tests used in the past. This test method also provides real time test results, which allows the construction team to make adjustments if needed to assure quality construction in real time without waiting for test results to be reported back from a laboratory.

Drilling borehole on compacted clay strip to install the Boutwell permeability testing apparatus

Installing the bentonite seal around the testing apparatus

The city of Salina's landfill is well-designed and constructed, professionally managed, and well operated as a composite-lined Subtitle D landfill. The City's practices have consistently conformed to state laws and regulations as determined by reviews by KDHE permitting and inspection staff. In summary, the management team of this facility applies sound engineering and management principles to current operations and in planning for the future. They have been progressive in making improvements at the facility and partnered well with the Bureau of Waste Management in a variety of ways. Currently, the city is developing plans to excavate and construct their fifth lined MSW unit during the summer of 2009.

HydraSleeve, a No-Purge Groundwater Sampler

by Juan Sexton, Bureau of Waste Management

With the natural water table decreasing for a variety of reasons in Western Kansas, it has become increasingly difficult to collect adequate quantities of water from groundwater monitoring wells for purging and sample collection. Similar difficulties may occur when trying to collect the necessary volume of groundwater from wells that monitor bedrock aquifers.

In some cases there may be enough water to purge a well (i.e., remove the recommended three borehole volumes of water) but the process then results in a "dry" well. When this happens, it is necessary to wait, sometimes overnight, for the water to recharge. In some instances, the water recharge is so slow that samples are not collected at all.

The traditional method of sampling groundwater involves using bailers for purging which can disturb the fine silty sediment that collects at the bottom of wells. This results in turbid or cloudy samples which can affect the analysis results, often yielding elevated/erroneous metals results. This may require a confirmation sampling event which adds unnecessary costs to groundwater monitoring.

Purging high-volume wells by hand with a bailer can be very time consuming, especially when sampling deep wells in Western Kansas. Slow recharging wells may purge faster, but if it is necessary to wait many hours for recharge before sampling, field staff are tied up at the site resulting in loss of productivity and increased labor expenses. In some cases when insufficient water impacts the ability to collect required samples, new deeper wells must be installed adding significant costs to landfill operations.

One solution to the aforementioned monitoring problems is the HydraSleeve groundwater sampler. Unlike any other groundwater sampler, the HydraSleeve instantaneously cores a whole water sample from a defined vertical and horizontal interval. HydraSleeve samples do not blend fluid from different vertical zones or pull water in from outside the well screen, but instead sample the groundwater as it flows through the well screen. The sample is collected without purging and with very little downwell disturbance, providing excellent control of turbidity. This minimizes the time spent on filtration of turbid samples typically collected after purging with a bailer or submersible pump.

Samples can be collected at in-situ pressure with almost no aeration

(continued on page 7)

"Cover"

(continued from page 2)

areas that are inactive for more than 60 days (not covered by placement of another lift of waste or final cover). Intermediate cover is a minimum of one foot of compacted soil material. Intermediate cover areas that will not receive any waste for an entire growing season must also be seeded. Intermediate cover should be graded and maintained to prevent ponding water, prevent access to the solid waste by vectors, and minimize infiltration of water. No waste should be visible in intermediate cover areas.

Both CDLs and MSWLFs must also meet appropriate final cover requirements. These requirements will be specified in your permit documents.

Both CDLs and MSWLFs can use alternative covers rather than soil. However, no alternative should be used unless approved by KDHE. Contact your KDHE permit engineer to gain approval for alternative cover materials.

KANSAS DON'T SPOIL IT!

HydraSleeve

(continued from page 6)

or degassing. This prevents alteration due to loss of volatiles or oxidation of sensitive parameters. Samples can be analyzed for all parameters. Samples collected with the HydraSleeve correlate well to other sampling methods.

HydraSleeve samplers are inexpensive, disposable, and very quick and easy to use, resulting in significant savings on startup and ongoing costs when compared to other sampling equipment such as bailers or pumps. HydraSleeve is effective for sampling low yield wells and suitable for both short and long term groundwater monitoring. It is especially useful in narrow, constricted, or damaged wells.

To use the HydraSleeve, the landfill owner or their consultant should contact the BWM project manager for the site to receive approval. The Sampling and Analysis Plan (SAP) will also need to be modified to indicate that the HydraSleeve is being used.

New Grant Opportunities

by Rodney Ferguson, Bureau of Waste Management

The Bureau of Waste Management is currently offering a variety of grants designed to improve your waste management and related educational efforts. Specifically these are the:

- ***Green School Grants*** - Available to public and private schools K through 12 to help implement projects and educate students on specific issues of proper waste management practices such as recycling, composting and waste reduction activities.
  Contact: Maureen Ruhlman
- ***Waste Tire Products Grants*** - Open to local units of government (including public schools) to assist with the purchase of products made from waste tires such as playground/athletic surface material, tables and benches.
  Contact: Sandy Barnett and Kris Hicks
- ***Household Hazardous Waste (HHW) Grants*** - Counties, cities or regional solid waste management entities that are part of an inter-local agreement are eligible for funding to develop a new HHW collection facility or to expand an existing program, which may include a satellite or regional program.
  Contact: Maria Morey
- ***Small Quantity Generator (SQG) Grants*** - Available to HHWs that wish to develop or expand a program to collect hazardous wastes from businesses that qualify as small quantity generators of hazardous waste. Grants can be used to assess the quantity and type of hazardous waste generated, and to purchase equipment and supplies to manage SQG waste.
  Contact: Maria Morey

Grant	Required Match	Application Due Date
Green Schools	25%	April 15, 2009
Waste Tire Products	50%	April 6, 2009
HHW	40%	May 15, 2009
SQG	25%	May 15, 2009

Kansas Department of Health & Environment
Bureau of Waste Management
1000 SW Jackson, Suite 320
Topeka, Kansas 66612-1366

264-21

ADDRESS SERVICE REQUESTED

PRSRT STD
U.S. POSTAGE
P A I D
TOPEKA, KS
PERMIT NO. 157

Calendar Items

March 24-26	*WORKS!* 2009 - Lindsborg
April 6	Waste Tire Derived Products Grants deadline
April 7-9	HHW 24-Hour Initial Training, Hays
April 15	Green Schools Grant Program deadline
April 22	Earth Day
May 15	Household Hazardous Waste & Small Quantity Generator Grant deadline
August 18-20	KDHE Environmental Conference (Wichita)
November 4-5	MSWLF Operator Training (Salina)

Get Caught!™

Solid Waste Update

Kansas Department of
Health & Environment

Prepared & Distributed by
The Bureau of Waste Management

Direct inquires and opinions to:
KDHE - BWM
Solid Waste Update
1000 SW Jackson, Suite 320
Topeka, KS 66612-1366

For subscription information:
Call: (785) 296-1600
Fax: (785) 296-8909
E-mail: bwm_web@kdheks.gov