

# Solid Waste UPDATE



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## Seward County Household Hazardous Waste Program Expansion

by Maria Morey, Bureau of Waste Management

The Seward County's Household Hazardous Waste (HHW) Program is located in Liberal and is part of the regional solid waste landfill service area. The program was initially permitted in May 1996 to accept HHW from Seward County residents. In January 2006, Seward County amended their HHW permit to accept Small Quantity Generator Hazardous Waste and became a regional host for Grant County's HHW program. Seward County's regional landfill service area includes Seward, Stevens, Haskell, Morton, and Grant Counties in Kansas along with Beaver and Texas Counties in Oklahoma.



that generate less than 55 pounds of hazardous waste or less than 2.2 pounds of acutely hazardous waste, each month) with a disposal alternative to landfilling. Seward County purchased four 90-gallon capacity chemical storage cabinets for placement in Grant County's transfer station. A 20-foot enclosed trailer was purchased to haul HHW from the new satellite facility to the host facility in Liberal. Within the first year of operation the Grant County satellite diverted approximately 850 pounds of HHW from the Seward County landfill.

Seward County received two HHW grants to assist with their expansion. The first grant in state fiscal year 2006 was used to implement a satellite collection program with Grant County, to purchase a mobile collection trailer, and to establish a Small Quantity Generator Program (SQG). A HHW facility with a SQG permitted program can assist small quantity generators of hazardous wastes (facilities

The second HHW grant was awarded in SFY 2007.

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## Forest View Landfill - Final Closure

by Dennis Degner, Bureau of Waste Management

Effective December 29, 2006 the Forest Landfill closed its gates to the public. This landfill, which is located in Kansas City (Wyandotte County) accepted approximately 1,200 tons of municipal solid waste (MSW) per day from numerous waste haulers in

the Kansas City metropolitan area. This is the first landfill closing in Kansas that is subject to the full Subtitle D MSW closure and post-closure care standards.

The notification to close was submitted to the Bureau of Waste Management on October 31, 2006.

Intermediate cover, a 12-inch layer of compacted soil, has been placed on all portions of the landfill that have not previously received final cover. A revised closure and post-closure plan was received in late January. This document, which is under

*(continued on page 5)*

# Estimated Landfill Disposal Rates in Selected Counties

by Bill Bider, Director, Bureau of Waste Management

In the previous issue of Solid Waste Update, we explained that KDHE would now be tracking and promoting the use of a different measure of waste reduction - - **pounds of MSW disposed per person per day**. Statewide and in most locations, this measure can be more easily calculated than a recycling percentage. It also more thoroughly accounts for all waste reduction activities including things like product substitutions, reuse, and lawn mulching.

KDHE is able to make estimates of the MSW disposal rate statewide and in selected counties using the statewide solid waste data base maintained through tonnage reports submitted by MSW landfills and transfer stations. Counties where the total population is served by one or two reporting facilities are those where local disposal rates can be most readily determined.

A list of counties for which KDHE has some confidence in the MSW and population data are provided in the accompanying table along with the calculated daily disposal rate. The data represents 2005 disposal practices. Counties may wish to study this information in more detail to determine if any adjustments are appropriate. Counties with a more complex assortment of disposal facilities and direct haul in-or-out would need to carry out more complex analyses of data to make their own estimates.

It is noteworthy that the disposal rates seem low for many rural counties, possibly due to the on-farm disposal practices allowed by state law.

### MSW Landfill Rates in Selected Kansas Locations

| Location                           | Tons of MSW Landfilled | 2005 Population | Landfill Rate Lb/Person/Day | Location                      | Tons of MSW Landfilled | 2005 Population  | Landfill Rate Lb/Person/Day |
|------------------------------------|------------------------|-----------------|-----------------------------|-------------------------------|------------------------|------------------|-----------------------------|
| Franklin County                    | 28,635                 | 26,247          | 5.98                        | Ellis County                  | 19,442                 | 26,767           | 3.98                        |
| Clark County                       | 2,286                  | 2,283           | 5.49                        | Morton County                 | 2,161                  | 3,196            | 3.70                        |
| Sedgwick County                    | 458,642                | 466,061         | 5.37                        | Barton, Pawnee, Ellsworth Cos | 26,496                 | 41,187           | 3.52                        |
| Logan County                       | 2,646                  | 2,794           | 5.19                        | Dickinson County              | 11,699                 | 19,209           | 3.34                        |
| Finney, Lane, Gray Cos, Scott City | 48,216                 | 51,343          | 5.15                        | Pawnee County                 | 3,783                  | 6,739            | 3.08                        |
| Phillips County                    | 5,152                  | 5,504           | 5.13                        | Trego County                  | 1,672                  | 3,050            | 3.01                        |
| Osborne County                     | 3,756                  | 4,050           | 5.08                        | Hodgeman County               | 1,142                  | 2,110            | 2.96                        |
| Coffee County                      | 8,005                  | 8,683           | 5.04                        | Marion County                 | 6,738                  | 12,952           | 2.85                        |
| Riley County                       | 58,023                 | 62,826          | 5.04                        | Cheyenne County               | 1,474                  | 2,946            | 2.74                        |
| McPherson County                   | 26,689                 | 29,523          | 4.93                        | Rawlins County                | 1,319                  | 2,672            | 2.69                        |
| Greeley County                     | 1,185                  | 1,349           | 4.81                        | Sherman County                | 2,954                  | 6,153            | 2.63                        |
| Wallace County                     | 1,365                  | 1,573           | 4.75                        | Lincoln County                | 1,630                  | 3,411            | 2.62                        |
| Ford, Edwards Cos.                 | 31,348                 | 37,043          | 4.64                        | Gove County                   | 1,249                  | 2,763            | 2.47                        |
| Lyon County                        | 30,162                 | 35,609          | 4.64                        | Kiowa County                  | 1,260                  | 2,984            | 2.31                        |
| Cloud County                       | 8,187                  | 9,759           | 4.60                        | Ness County                   | 1,236                  | 3,009            | 2.25                        |
| Stevens County                     | 4,138                  | 5,412           | 4.19                        |                               |                        |                  |                             |
| Stanton County                     | 1,683                  | 2,245           | 4.11                        | <b>Statewide Total</b>        | <b>2,893,766</b>       | <b>2,744,687</b> | <b>5.78</b>                 |

## Composting Dead Animals WORKS!

by Ken Powell, Bureau of Waste Management

Anyone who raises livestock knows the headaches that go with the disposal of mortalities. These mortalities may be daily death losses, diseased animals, or animals that die due to weather-related events. Rendering is the preferred management method because it utilizes parts of the animals to produce various commercial products. If rendering is not available, composting is the best alternative.

A pair of large snowstorms has left western Kansas with a larger than normal number of mortalities in January. Rendering plants were able to accept most of the animals from the large feedlots. The smaller feedlots and those producers with cattle on wheat pasture also needed alternative disposal options. Composting has been a valuable option for the disposal of these mortalities. If the composting is done correctly, it can be an

environmentally sound disposal option as well as a way of producing a product that can be used as a crop nutrient.

KDHE-BWM offers a one-day training workshop every February to the livestock facility operators on how



to compost both manure and dead animals. Dr. Thomas Glanville, Iowa State University, was our main presenter this year. The focus of his research in

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# SWANA Sunflower Chapter

by Mike Tabor, President, SWANA Kansas Sunflower Chapter

2007 finds the SWANA Kansas Sunflower Chapter busy working on great new ideas and projects. Our mission to EDUCATE, INNOVATE, and COMMUNICATE will be in the spotlight.

Our goal to EDUCATE will be fulfilled with one of the biggest and best MSWLF training conferences in years. We will be INNOVATIVE in how we bring new technology topics to the forefront through our training and membership activities and we will COMMUNICATE with our members through roundtable meetings throughout the state.

Through recent discussions,

we have strengthened our partnership with KDHE in training. We are committed to providing top quality training to the solid waste industry in Kansas and striking a balance between regulatory and operational issues. Many states have required training in solid waste issues and many now have mandatory certification programs. In talking with KDHE, some type of more defined training requirements may be on the



*(continued on page 5)*

## New Solid Waste Grant Opportunities for SFY 2008

Details for FY 2008 solid waste grants are currently being finalized. There will definitely be some changes and new opportunities for interested public and private applicants in this round. A preliminary overview of the three grant programs is provided below. Complete grant guides and application materials will be provided soon through the mail, at the WORKS Conference in Hutchinson, on the Bureau of Waste Management web page, and through workshops. Applications will likely be due in June 2007 with awards made in late summer.

### Competitive Plan Implementation Grants for Waste Reduction Projects

This grant program has traditionally supported a wide variety of recycling and composting projects. In this expedited round of grants, time-sensitive projects of these types will remain eligible, but the focus and priority will be to establish "pilot electronic waste collection centers." E-waste management and recycling continues to grow in importance and KDHE intends to support the development of five pilot collection centers, including regional centers, to help policy makers understand how best to collect and recycle e-waste. The success of these pilot programs may lead to a legislative initiative in 2009 to establish statewide collection centers. Counties will be responsible for implementing the pilot collection centers; however, they may designate a private company to serve them in this way. Under the pilot grants, counties or their designees will receive funds for structures to store collected e-waste and operational expenses related to waste handling and recycling.

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## Benefits of Recycling

by Meranda Reifschneider, Bureau of Waste Management

The benefits of recycling are far-reaching, including energy savings, job creation and economic growth, natural resource conservation, reduced emissions of greenhouse gases, pollution prevention, and a reduced need for new landfills.

### Economic Benefits

The Office of the Federal Environmental Executive estimates that recycling and remanufacturing industries account for more than \$200 billion in revenue annually. New businesses are created to haul, process, and broker recovered materials, as well as manufacture and distribute products made with recovered materials.

These new businesses employ workers from a broad spectrum of the labor market, ranging from low-to-high skilled positions. New jobs involve materials handling and processing, high-quality product manufacturing, and engineering of new processes. The Washington D.C.-based Institute for Local Self Reliance (ILSR) reports that on a per ton basis, the sorting and processing of recyclables alone sustains 10 times more jobs than landfilling. Recycling based manufacturers have an even bigger impact on the economy, employing even more people and at higher wages.

Investments in recycling equipment and the companies themselves also benefit the economy and contribute to growth. Moreover, the drive for efficient handling and use of recycled materials spurs innovation, a key to long-term economic growth.

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www.kdheks.gov/waste  
www.getcaughtrecycling.org www.kansasdontspoilit.com

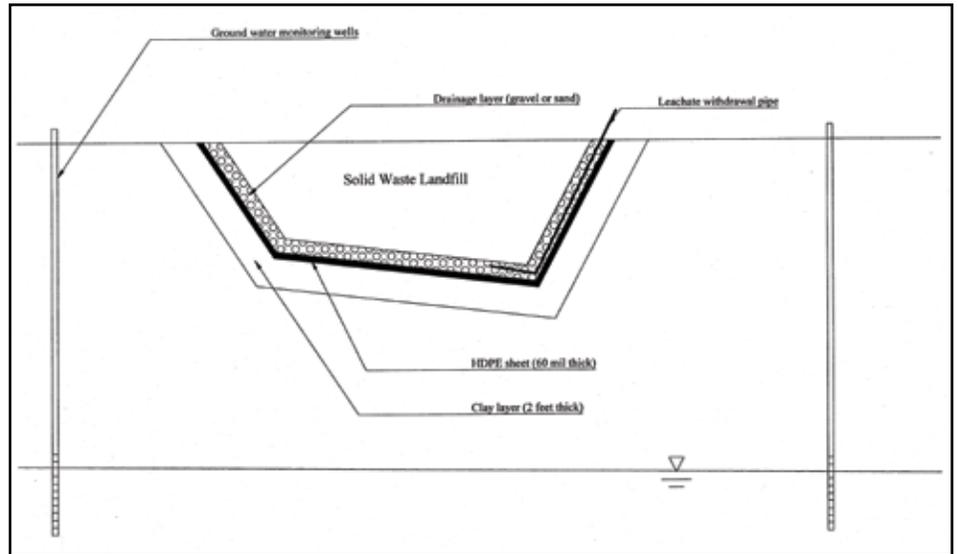
# What is a Composite Liner in a Sub D Landfill?

by Sam Sunderraj, Bureau of Waste Management

Consider a high density polyethylene (HDPE) container - a milk jug for example. The container will hold the liquid without leaking. This is a one liner container. If the HDPE liner (the milk jug) had any holes in it, the container would not be able to hold any liquid.

Now suppose that this container is placed in close and continuous contact over a surface that is firm, pliable and very impermeable, for example, pizza dough, play dough, or shall we say moist compacted clay. This would be a composite container composed of a HDPE liner laid in intimate contact over the compacted clay liner. We now have a **composite liner** system. The clay will have a sealing effect on any leaks in the HDPE component of the composite liner, making the composite liner system considerably more impermeable and protective than the clay liner alone.

If the level of liquid in the container (milk jug) is kept very low, the sealing effect of the clay on any holes in the HDPE component will be maintained since the liquid pressure exerted on it is minimized. This is the principle that is at work in "Subtitle D" landfills. A **designed** composite liner consisting of HDPE in close and continuous contact over clay. This is **constructed** with great care and tested to avoid holes in the HDPE component. This system is then **operated** to ensure that the liquid pressure on the bottom of the landfill never exceeds 12 inches even though the height of the waste mass above may be several hundred feet. Lastly, the landfill containment is **monitored** by groundwater monitoring wells located outside the landfill which are used to verify that the landfill container is functioning as intended and that no contaminants are leaking from the landfill into the groundwater below.



## Seward County HHW Program Expansion

(continued from page 1)

This grant provided funding to expand and improve Seward County's HHW facility. With the addition of the Grant County satellite facility, and the SGQ permit amendment, Seward County HHW required more storage capacity. Under this grant proposal, Seward County's current HHW storage space was converted to office space and is used for an office storage area. The HHW operation will move to a 24' x 36' steel building located next to the office. The retrofit of this building includes a new explosion-proof heater, and the replacement of existing lights and wiring with explosion-proof lighting and wiring. This building offers an overhead door making the collection and shipment of HHW more convenient.

Seward County is researching a plan to establish a HHW satellite facility at the transfer station in Guymon, Oklahoma. Because the Seward County landfill already receives solid waste from the Guymon transfer station, they are taking a progressive step by researching the development of a HHW satellite facility in Oklahoma, in turn decreasing HHW disposal at the landfill in Kansas.

Seward County's HHW program is an example of program expansion to meet the needs of the community. By expanding their operation, they are able to offer HHW service in Grant County; implement a program to limit SQG business waste from entering the landfill; and now research the establishment of a HHW satellite facility in Guymon, Oklahoma. Congratulations to Seward County HHW for expanding their services and decreasing the amount of HHW in Kansas landfills and our environment.



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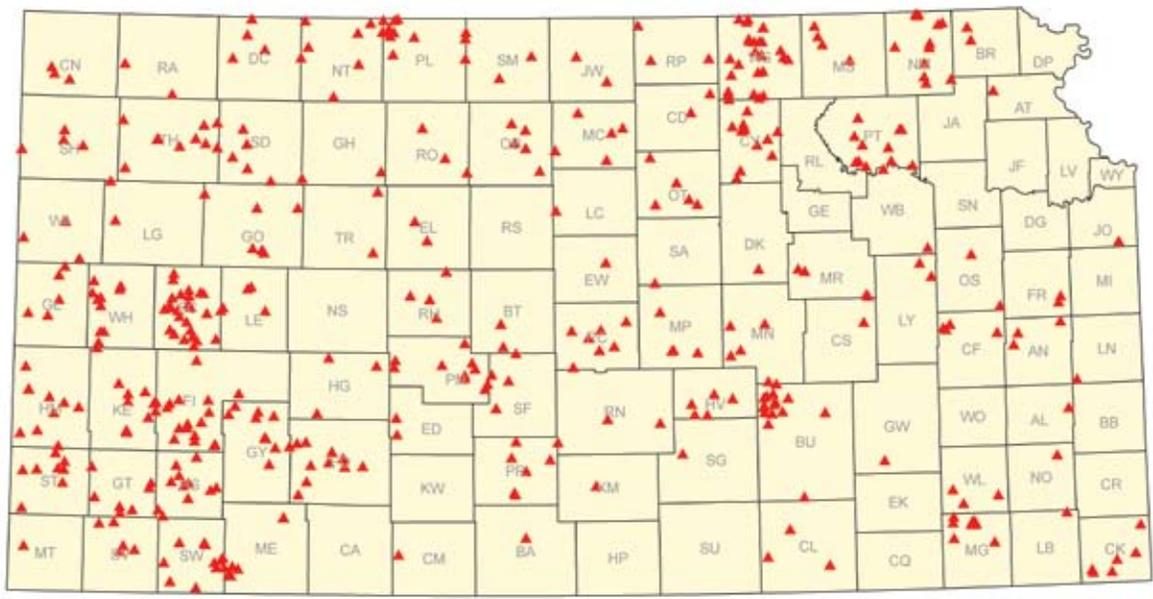
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# Pre-Selected Animal Burial Sites at Confined Animal Feeding Operations (CAFOs)



KDHE has approved about 500 burial sites for animal carcasses at CAFOs to be used if a foreign animal disease should impact Kansas facilities or in the case of various natural disasters. Sites were selected at facilities to minimize animal movement and the associated spread of disease. The department continues to work on about 100 other sites. The goal of the program is to establish nearby burial sites for nearly all of the large CAFOs including cattle, hogs, and some poultry facilities.

## New Solid Waste Grant Opportunities for SFY 2008

*(continued from page 3)*

### Household Hazardous Waste Grants

To conserve funds for the pilot e-waste collection center grants, the only HHW grants that will be awarded in FY 2007 will be to serve areas that currently have no HHW programs. This could be new programs or the expansion of regional programs to serve new counties.

### Waste Tire Grants for Playground cover and Other Products

In accordance with legislative directives, KDHE intends to implement the second phase of a two-year grant program to stimulate the production and sale of commercial products made from recycled Kansas waste tires. The first phase was to award equipment grants to process the tires into a usable raw material. The next phase will be grants to support the purchase of products made from recycled tires giving priority to playground cover. This grant program began as grants to local units of government for playground cover only, but the 2007 Legislature modified the law to direct KDHE to provide grants to assist in the purchase of other products made from recycled tires. This grant program will also be competitive and pay up to 50 percent of the cost of the products.



## Composting Dead Animals *(continued from page 2)*

the last few years has been on the procedures for composting mortalities in emergency situations. He also discussed the need for facilities to develop emergency plans and how composting can be an integral part of those plans. Dr. Glanville's research has been on cattle and hogs, but he is very familiar with the composting process for poultry and sheep as well.

Dr. Joe Harner, Kansas State University, provided the training on composting of manure from feedlots and Dr. Bill Eberle, Terreneu Consulting, provided information on marketing of the compost for different uses.

For more information on the requirements for composting mortalities, contact Ken Powell at [kpowell@kdhe.state.ks.us](mailto:kpowell@kdhe.state.ks.us) or by phone at (785) 296-1121.

# Benefits of Recycling

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## Energy Savings

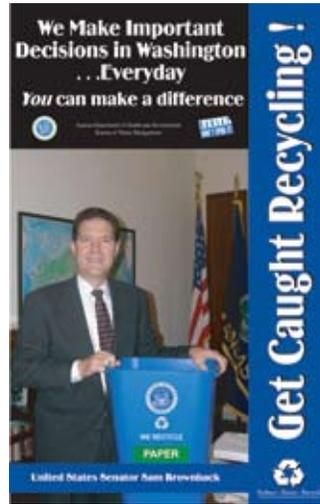
Recycling also offers significant benefits in terms of energy savings. The steps in supplying recycled materials to industry, including collection, processing and transportation, typically use less energy than the steps in supplying virgin materials to industry. Additional energy savings occur in the manufacturing process when products are made from already processed material versus from scratch using raw materials. For instance, the Container Recycling Institute (CRI) reports that manufacturing an aluminum can from recycled material requires only about 5 percent of the energy that would be needed to produce the can from virgin materials. The amount of energy saved is roughly equivalent to what is needed to power a TV for three hours (CRI). Recycling paper also saves energy (equivalent to 400 gallons of oil for each ton recycled).



## Pollution Prevention

One of the greatest benefits of recycling is pollution prevention. By saving energy, recycling also reduces pollution emissions. When less energy is used to make products, fewer fossil fuels are burned and less green house gas, mercury, and other harmful chemicals are emitted into the environment. For example, that aluminum can made from recycled material that required only 5 percent of the energy needed to produce it from raw materials, also produced 95 percent less air pollution (CRI).

Recycling also reduces pollution by diverting organic material from landfills where it produces methane gas as it decomposes. Methane, a



potent greenhouse gas, is 21 times more effective at trapping heat in the atmosphere than carbon dioxide.

Recycling prevents pollution by increasing the potential amount of carbon that is absorbed by trees. Trees absorb carbon dioxide from the atmosphere in a process called carbon sequestration. Recycling of paper products reduces the number of trees that are cut down to make these products. With more trees standing, more carbon is absorbed from the air. Each ton of paper that is recycled prevents 500 pounds of air pollution and thousands of gallons of contaminated waste water from being released into the environment (U.S. EPA).

## Natural Resource Conservation

The final, and perhaps the most significant benefit of recycling, is its potential to preserve our natural resources. Recycling allows us to use these resources more than once, reducing the need to chop down, extract, process, refine and transport natural resources such as timber, petroleum, and mineral ores. Glass, for example, never wears out. It can be recycled over and over again. In the case of aluminum, 4 pounds of bauxite ore is saved for every pound of aluminum that is recycled (CRI). By using recycled materials rather than virgin resources, recycling also preserves biodiversity by slowing the destruction of forests, wetlands, rivers and other places essential to wildlife. Additionally, other detrimental impacts, such as soil erosion associated with logging and mining, are lessened.

As these facts show, the benefits of recycling encompass much more than waste management objectives. While recycling goes a long way in preserving valuable landfill space, it also yields significant economic and environmental benefits. This is why the disposal of materials that could be recycled wastes valuable and limited natural resources.

### How was the Solid Waste Management Fund used in State Fiscal Year 2006?

|                                      |                           |              |
|--------------------------------------|---------------------------|--------------|
| Salaries and Fringes (43 positions)  |                           | \$ 2,254,168 |
| Operational Expenses                 |                           | \$ 361,878   |
| Grants                               |                           |              |
|                                      | Recycling and Composting  | \$ 1,037,274 |
|                                      | HHW                       | 0            |
| Contracts                            |                           |              |
|                                      | Public Education/Training | \$ 322,919   |
|                                      | Lab Chemical Sweeps       | \$ 39,476    |
|                                      | Illegal Dump Clean-Up     | \$ 80,000    |
|                                      | City Dump Remediation     | \$ 295,101   |
|                                      | Other                     | \$ 15,724    |
|                                      | Total - Contracts         | \$ 753,220   |
| Total Expenses                       |                           | \$ 4,406,540 |
| Indirect transfers - Agency Overhead |                           | \$ 968,990   |
| Total Use of Fund                    |                           | \$ 5,375,530 |
| FY 2006 Revenue                      |                           | \$ 5,123,135 |

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## Calendar Items

|                        |   |
|------------------------|---|
| March 20, 2007         | HHW 8-hr Training* - Ottawa   |
| March 27-29, 2007      | <i>WORKS!</i> 2007, Hutchinson  |
| April 3,5,10,12, 2007  | HHW 8-hr Training* - 3rd - El Dorado;<br>5th - Pratt; 10th - Colby; 12th - Hays |
| April 10, 12, 17, 2007 | Grants Workshops - 10th - Wilson;<br>12th - Topeka; 17th - Wichita              |
| April 19, 2007         | APWA/SWANA Roundtable - Junction City   |
| April 20, 2007         | Earth Day Festival - Capitol Grounds, Topeka                                    |
| April 24-26, 2007      | HHW 24-hour Training* - Topeka  |
| May 1, 3 2007          | HHW 8-hr Training* - 1st - Kansas City;<br>3rd - Junction City                  |
| May 8-10, 2007         | HHW 24-hour Training* - Hays  |
| May 17, 2007           | SWANA Roundtable Meeting - Hays   |
| May 18, 2007           | HHW Grant Deadline  |
| June 1, 2007           | Waste Tire Products/Playground Grant Deadline                                   |
| June 15, 2007          | E-Waste/CPI Grant Deadline  |
| August 9, 2007         | SWANA Roundtable Meeting - Olathe   |
| November 8, 2007       | SWANA Roundtable Meeting - Garden City  |

\*HHW Training is limited to Kansas HHW staff



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