Approved: 2-9-2006
Date

MINUTES OF THE HOUSE ENVIRONMENT COMMITTEE

The meeting was called to order by Chairperson Joann Freeborn at 3:30 P.M. on January 24, 2006 in Room 231-N of the Capitol.

All members were present except:
Representative Bill Light- excused
Representative Tom Hawk- excused

Committee staff present:
Raney Gilliland, Legislative Research Department
Emalene Correll, Legislative Research Department
Lisa Montgomery, Revisor of Statutes Office
Pam Shaffer, Committee Secretary

Conferees appearing before the committee:
Rod Bremby, Secretary Kansas Department of Health and Environment

Others attending:
See attached list.

Chairperson Freeborn reminded everyone to please sign the attendance sheet being passed around. She announced the agenda for Thursday, January 26, bill requests; a briefing on abandoned oil and gas wells to be given by Bob Jenkins and Maurice Korphage both of the Kansas Corporation Commission, and possible action on **HB2558 - Conservation and environmental protection or encroachment restriction districts**.

Chairperson Freeborn announced that all committee members were given a handout of a Report on ***SB364, which was passed in 2004*** overview that was provided by Lane Letourneau, Kansas Department of Agriculture, Division of Water Resources. (See attachment 1)

Chairperson Freeborn than asked if there were any bill requests: Brent Haden, Kansas Livestock Association introduced a bill, inspection of dams by chief engineer; access to private property; costs of inspection. Representative Knox moved to introduce the bill, Representative Johnson seconded, motion carried. (See Attachment 2)

Woody Moses, Kansas Aggregate Producers Association requested introduction of a bill. There were amendments proposed last week to **HB255**8, now they decided to introduce a bill of their own (See attachment 3) Representative Hayzlett moved to introduce the bill, Representative Menghini seconded, motion carried

Chairperson Freeborn stated that Representative Flora was on this list to introduce a bill, she asked if there was someone present to represent him, no one came forward, she stated that the committee will return to bill requests after Mr. Bremby's overview.

Chairperson Freeborn introduced Rod Bremby, Secretary, Kansas Department of Health and Environment to present an overview of the Division of Environment. (See attachment 4) Questions and discussion followed Mr. Bremby's overview.

Chairperson Freeborn thanked Mr. Bremby for his overview, and returned to bill requests.

Representative Flora requested introduction of two bills the first bill was regarding buying deer licenses across the counter for non residents, the second bill addressed that when there is an oil spill landowners must be notified. Representative Flora moved to introduce these bills, Representative Flaharty seconded, motion carried.

Chairperson Freeborn adjourned the meeting, the next scheduled meeting is Thursday, January 26.

HOUSE ENVIRONMENT COMMITTEE GUEST LIST

DATE: 01/24/06

NAME	REPRESENTING
Lindsey Douglas	Hein Law Firm
CV Cotsoradis	KDA
SEAN MILLER	KS DAIRY ASSN
E.R. "Woody" Moses	
Judy Law	Kearney & Associates
Brent Haden	KLA
Andy Kollman	Rep. Johnson
Diane Hoffman	KS Assoc of Wheat Growers
Jess Price (intern)	
John Peterson	Capitol Strategies
Kent Weatherby	KS River Water Assur. Dist
Ralph Suther	
LARRY TROUSS	
Stan Mann	
Jack Nemec	
Evan Dressman	
John D Remmert	

Report on Senate Bill 364

to the

House Committee on Environment

by Lane Letourneau

Kansas Department of Agriculture's
Division of Water Resources

January 20, 2006

The 2004 Legislature passed Senate Bill 364 requiring the Kansas Department of Agriculture's Division of Water Resources to work with the Kansas Geological Survey to study and make recommendations on three items.

First, we were to study water banking as it relates to sand and gravel pits.

Second, we were asked to calculate the amount of water lost to evaporation and assess its effect on consumptive use from sand and gravel pits, with special emphasis given to salt cedar (tamarisk), a plant that consumes a lot of water.

And third, the Legislature asked to know more about pollution and flood control impacts of diverting water runoff into sand and gravel pits.

This direction from the Legislature came without funding. The agencies involved reallocated funds in our current budgets to start the project, but $66,000 is needed to complete it. The USGS will add $24,000, for total of $89,900, to complete the second phase of the study.

Summary

This document will report our progress addressing the three areas of interest.

On the question of water banking, we have found that it could be a viable option for the sand and gravel industry.

On the second two questions, how much water is lost to evapotranspiration from sand and gravel operations, and the pollution and flood control impact of these businesses, the answers are less clear. We continue to work with the Kansas Geological Survey to gather the data we need to answer those questions.

Summary of Progress on SB 364 Requirements

Question One: Water banking.

Water banking could be a viable option for the sand and gravel industry. Current statutes allow for two banks to be chartered: one for groundwater and one for surface water or a combination of surface water and groundwater. The Central Kansas Water Bank was chartered as a groundwater bank.

Currently, there is no clear, front-running candidate for a second water bank. Some have proposed a combined surface water-groundwater bank below Sebelius Reservoir along Prairie Dog Creek. In the past there has been talk about, but no proposal for, a surface water bank in the Kansas River basin or the lower Republican River basin. Therefore, a bank could be chartered in another area and be used by the sand and gravel industry in areas where new appropriations are not available.

The Central Kansas Water Bank allows leases within some stream corridors. Since sand and gravel pits often are located within stream corridors, leases would be available only on a limited in that charter. However, current Water Appropriation Act rules allow existing water rights to be acquired and used to offset evaporation especially for sand and gravel operators within the same stream channel aquifer.

If another bank is chartered, it would be possible for it to allow leases to account for net evaporation from pits. The leased water would have to come from deposited water rights within the same hydrologic unit. There is a statutory 10 percent conservation element required as a result of basic operations. One possible problem with this concept is that pits permanently expose groundwater to evaporation while leases are accomplished through term permits not to exceed five years. If a bank's charter would lapse, the pits would continue to consume water through evaporation without any way to compensate for that through the bank. So, unless a bank continues to operate indefinitely, using a water bank for sand and gravel operations may not be compatible with the Water Banking Act. However, the evaporation could be covered by acquiring an existing water right if a bank ceases to be an option.

Statutes prohibit water banks from having overlapping boundaries. Therefore, a new bank could not include the area covered by the existing bank. The Central Kansas Water Bank essentially covers all of Big Bend Groundwater Management District No. 5, which includes the middle Arkansas River. That is an active area for the sand and gravel industry and an area where new water appropriations are limited. Perhaps the sand and gravel industry could use the Central Kansas Water Bank and charter another bank along a river or another area of consideration.

Statutes require a charter to show how the bank is feasible. Can the bank generate enough revenue to cover its own costs plus any expenses that would be reimbursed to the Division of Water Resources? Whether this is an issue for the aggregate industry might depend on how large an area would be included in a new bank and how many potential or existing locations would be used for sand and gravel operations.

If current water banking legislation does not meet the industry's needs, considerations may need to be given to other alternatives.

Question Two: Calculating evapotranspiration and its effect on consumptive use from sand and gravel pits, with special emphasis on salt cedar (tamarisk).

Water use by tamarisk and other phreatophytes is an area of continuing interest. The Kansas Geological Survey is continuing research to help answer this question. They are working on a groundwater assessment in relation to salt cedar control. The assessment will use water table fluctuations to estimate the impact various salt cedar control measures have on groundwater resources in the Cimarron River alluvial aquifer at a site in Clark County. The project is in an area of salt cedar infestation along the Cimarron River south of Ashland.

Four experimental plots were established in pasture on the north side of the Cimarron River. One plot is used for monitoring unaltered conditions, while the other three plots are for different salt cedar control measures. Control measures began in mid-March 2005 and are continuing. Water table fluctuation data are available from when the salt cedars growing. More data are being collected now that control measures have been introduced. It is too early to draw conclusions, but the results should allow this question to be assessed. We recommend that the Kansas Geological Survey continue the study.

Question Three: Impact of diverting surface water into groundwater pits.

Background is provided because of the complexity and interest in this study. This is a work in progress.

Groundwater pits typically are the result of sand and gravel operations near streams where shallow water tables are exposed by excavation of gravel. Urban developers build homes around pits no longer in production and use them as real estate amenities and for contact recreation.

Groundwater pits must be permitted as a beneficial use of water under the Kansas Water Appropriation Act to account for evaporation. Fundamental to the Kansas Water Appropriation Act are protecting existing water rights from impairment and protecting public interest. A condition of groundwater pit permits is preventing impairment to existing groundwater users through the deterioration of groundwater quality when untreated surface water enters the pit. This condition typically requires a low berm around the pit to prevent surface runoff from entering the pit, or through some other means of treatment.

In some areas of Kansas, because of topography and hydrology, gravel pits have been used as storm water detention structures to offset the increase in flood peak from impervious urban areas. Sand and gravel operators and developers believe that runoff contains few, if any, contaminants and that the risk of impairment to shallow groundwater is minimal or does not exist. It is important to note that this group has stated they do not want to pollute groundwater, nor do they want to pay for constructing berms or providing water treatment if either is not necessary. However, water managers have raised questions about potential contamination that

may result from untreated storm water diverted directly into groundwater pits which are a direct conduit to the aquifer system.

Task Forces

Two task forces that include persons from state and local interests have formed to look at ways to address pollution and floodwater issues. One task force is dealing with water quality. The second task force is dealing with storm water retention. Task force members have met to develop a coordinated study approach.

Because of its topography, the Wichita metro area has used gravel pits as storm water detention structures to offset the increase in flood peak from impervious urban areas. Therefore, the work effort will focus on this area in Sedgwick County.

Representatives of the following state and local entities are part of the work group:

- Kansas Department of Agriculture's Division of Water Resources (water appropriation)
- Kansas Geological Survey (hydrologic and geologic information)
- Kansas Department of Health and Environment (water quality)
- Kansas Water Office (basin planning and coordination)
- Sedgwick County (storm water, drainage planning and management, and site selection)
- Groundwater Management District Manager (local groundwater management)
- Management and Protection Groundwater Management District (board member)
- Senator and Former Sedgwick County Commissioner (chair of task force)
- Wichita Area Builders Association and Developers (groundwater pits as real estate amenities)

The task force will study the effect of raw storm water being diverted into pits using these methods:

Data collection and analysis

- Select representative groundwater pits that cover the scope of landscape found surrounding them.
- Sample the water column and bed sediments in a number of places and composite for analysis at each pit. Constituent analysis will include common ions, metals, organic compounds and nutrients. Water column samples will be collected with depth integrated samplers. Bed sediments will be sampled by standard grab sampling equipment. USGS standard protocols for field collection will be used.
- Install a groundwater well up-gradient and another down-gradient of the pit and sample for the same suite of constituents as was sampled in the pit. USGS standard protocols for field collection will be used.
- Compare the water quality characteristics of the pit and the adjacent groundwater to determine to what extent constituents are transported from the pit to the groundwater.

Work that has taken place:

- Six representative sites were selected by the task force. Sedgwick County staff have worked with local entities to acquire access to the pits and well sites.
- The Bureau of Reclamation has drilled observation wells near the selected sites. Wells were installed by auger methods and screened near the water table. The annular space will be sealed and a removable cap will be installed to prevent migration of surface water and other contaminants from entering the well and still have access for sampling. Caps a small distance above the ground surface are typical but surface flush caps can be installed where necessary. The funding for the drilling came from a Bureau of Reclamation grant for assistance to the states.
- USGS is scheduled to collect the samples from March to June 2006 from the wells and pits. Samples of the pit will be taken from a small work boat.
- Laboratory analysis will be completed by mid to late summer, and results will be reported by the USGS in a basic data report to the Division of Water Resources on February 1, 2007.
- The final assessment report and recommendations to the Legislature will be completed after that date.

Please see the attached USGS proposal. The original proposal for all six sites was approximately $275,000, with $198,000 being state and local funded. The remaining $77,000 would be funded by the USGS. Funding for this project was not provided by the Legislature. Task force members found money in existing budgets to fund at least $123,000. This rate will allow us to study four of the six sites, and the USGS will add $45,000 to this phase of the study.

Completing the full study will require that $65,900 be appropriated. The USGS will add $24,000, for a total of $89,900 for the second phase of the study.

The task force indicated it would like a long-term study. The infrastructure is in place, and it could be done if additional funding was available. A proposed cost is not available. The Legislature would have to approve additional money for a long-term study. The USGS has been receptive to this study because of its potential to have national impact. The USGS is very flexible and will do what it can to assist with this study.

It's important to note that we have a diverse group of state, local agencies, and private interests working on a common project. All parties have agreed to abide by the study's outcome. We need to credit the chairperson (Senator McGinn) of this group for keeping the parties focused on our common goal.

Task Force Dealing With Routing Floodwater Into Groundwater Pits

This also is a work in progress. The task force focus became how to minimize the flood risk in Sedgwick County and urban areas. This task force met biweekly for 10 months.

The members of this task force are:

- nine members from Wichita and Sedgwick County
- two members from other governmental bodies
- six at-large appointees
- six ex-officio members who contribute expertise

The task force presented a report to the City of Wichita and Sedgwick County recommending initiatives and some solutions regarding flooding problems. One initiative recommends appointing a technical task force to develop a set of uniform floodplain development standards.

Currently, it is not possible to provide an analysis of impact of pits being used for storm water retention. It is recommended that the initiative mentioned above be implemented, with the water quality study being used as part of the floodplain development standards.

Water-Quality Impacts of Residential Land Use and Runoff to Sand and Gravel Pits in the Big Slough Creek area, near Wichita, Kansas

A proposal written for the Kansas Department of Agriculture, Division of Water Resources by Andy Ziegler and Mike Pope, U.S. Geological Survey, Lawrence, Kansas

Revised January 13, 2006

Summary and Problem:

Nationally and in Kansas, sand and gravel are excavated for use as construction materials. Typically, these sand and gravel operations are near metropolitan areas and in larger river alluvial systems. After excavation operations are concluded, a pit remains that typically intersects the water table in ground water and fills with water forming a small lake. These sand and gravel pit lakes can provide an aesthetically pleasing focal point for residential developments and recreational activities. The excavation pits also are attractive for detention of urban runoff.

Kansas Senate Bill 364 directed the Kansas Department of Agriculture, Division of Water Resources on a number of environmental and permitting issues associated with sand and gravel operations and the pits that remain after conclusion of mining activities. One of the issues associated with development of sand and gravel pits is to determine the impacts of diverting water runoff into sand and gravel pits.

Urban runoff is cited as a leading source of pollutants causing water-quality impairments to surface waters (USEPA, 2004). Impacts upon surface water include:

- Storm events cause temporary increases in concentrations of sediment and sediment-associated contaminants, such as bacteria,
- Long-term cumulative impacts of the pollutants,
- And physical impacts of sediment filling impoundments and channel scour and changes.

Pollutants typically exceeding surface water-quality standards in urban runoff include sediment and solids, increased oxygen demand (cause dissolved oxygen sags), nitrogen and phosphorus (fertilizers), pathogens (septic systems, livestock, pets), petroleum hydrocarbons (fuels), metals (copper, lead, and zinc), and synthetic organics (pesticides). Excessive nutrients can lead to algal blooms that may create aesthetic problems (taste and odor) in the pits and deter the recreational benefits of these water bodies. Concentrations of indicator bacteria may exceed contact recreation standards and cause an impairment that affects human health.

Ground water in the vicinity of sand and gravel pits may be affected by the recharge from residential runoff into the pits. Excessive concentrations of constituents associated with runoff may cause degradation of ground-water quality that can exceed drinking water standards. Additionally, residential developments that drain into sand pits usually are on septic systems and compounds associated with wastewater are likely to occur in either runoff or in ground water. All of the constituents associated with septic systems and runoff potentially can degrade water quality to the point where self-supplied drinking water near the pits may not meet drinking water standards. However, recent studies by the USGS in the area (Pope and others (2000) and Pope

and others (2002) have shown that the ground water in the area is probably affected by agricultural practices resulting in concentrations of nitrate exceeding drinking water standards in some wells and atrazine frequently detected in samples of ground water.

Water-quality impacts of runoff from the residential development near sand pits on the surface-water in the pits are unknown. The impacts of the runoff on ground-water quality are unknown and the combined impacts may have human health impacts. Comparisons of water quality in the sand and gravel pits to surface water-quality standards including recreational water-quality standards and comparisons of nearby ground-water quality to drinking-water standards are needed to determine if degradation or impairments of existing resources are occurring.

Objective:

Characterize the existing surface-water quality and ground-water quality at selected sand and gravel pits with different amounts of urbanization in the vicinity of the Arkansas River and the Big Slough Creek basin near Wichita, Kansas.

Approach:

The Division of Water Resources in cooperation with the Kansas Geological Survey, Kansas Department of Health and Environment, and Kansas Water Office, Sedgwick County, Wichita, Groundwater Management District 2, and U.S. Department of Interior, Bureau of Reclamation and the U.S. Geological Survey has led an effort to address the requirements of SB 364 characterizing the effects of diversion of stormwater into the excavation pits. A number of meetings have taken place amongst representatives of the agencies above and an approach was developed. The Kansas Department of Health and Environment in cooperation with the other agencies developed the sites selection criteria and water-quality constituent lists in appendices 1 and 2 at the back of this proposal.

Based upon a reconnaissance of a number of excavation pits in the area by Sedgwick County, 6 pits have been selected for study. The sites represent a baseline site with primarily agricultural land use and 5 sites of varying ages and densities of residential, commercial, or light industrial land use. This proposal describes the role of the U.S. Geological Survey in this study. The sampling and estimated costs for the study are divided into 2 Phases. Phase 1 includes the sampling and analysis of 4 pits and wells near the pits during March – June 2006 with results delivered to the Division of Water Resources by February 1, 2007. Phase 2 includes the sampling and analysis of 2 pits and wells near the pits during March – June 2007 with results delivered to the Division of Water Resources by February 1, 2008. The USGS will continue to participate in meetings and provide technical advice when requested, and will sample the sediment and water from pits and wells near the pits as described in this proposal. Details on the approach follow:

1. Determine sand pit sediment quality and ground-water flow path.
    a. Collect and analyze a single sediment sample for the constituents listed in tables 1-2. Comparison of chemical results to US EPA sediment guidelines and sediment from other reservoirs in Kansas can be made by DWR.

b. Install a lake-elevation measuring point and survey in levels from a nearby benchmark to determine the potentiometric surface altitude in the pit relative to adjacent wells. This information will be used to determine the ground-water flow path and evaluate the potential for contamination of nearby domestic supply wells from the sand pits.

2. Surface water quality will be quantified in the pits.
   Quantify existing surface-water quality in the sand pit. Three samples will be contemporaneous with runoff events. Samples will be collected during March – June 2006 for constituents listed in table 3. One of these three samples will be analyzed for all of the constituents in Tables 4-10. Water-quality information will be used to characterize the storm runoff.

3. Ground-water flow paths and water quality will be determined in the vicinity of the pits.
   Wells were drilled following guidelines developed by the U.S. Bureau of Reclamation in cooperation with the other agencies involved generally following the guidelines of Lapham and other (1996). Wells were situated with one well situated upgradient of the sand and gravel pit to define baseline concentrations in the aquifer and 2 wells down gradient from the pit at distances of about 500 feet from the pit to assess the effects of the pit on ground water. Screened intervals were set in the zone approximately equal to the bottom of the pit. DWR will maintain ownership and responsibility for all monitoring wells. These wells will be used to define the water table in the vicinity of the sand pit and residential developments. Samples will be collected once from each well soon after the pit has received large volumes from storm events to estimate the effects of runoff on the ground-water quality. All samples will be analyzed for the constituents listed in tables 4-10.

4. Deliver data to DWR by February 1, 2007 for Phase 1 and February 1, 2008 for Phase 2.
   Data from these sites will be used to quantify the effects of runoff and residential land use on water and sediment quality in the pit and water-quality in ground water.

Quality Assurance:

Approximately ten percent of total samples collected will be quality-control samples including replicates, blanks, and standard reference samples. Data will be reviewed as it is received from the laboratories and will be summarized annually. Sampling procedures and processing will be conducted according to USGS protocols published in the National Field Manual for the Collection of Water-Quality Data and in the Kansas District Quality Assurance Plan for Water-Quality Activities.

Products:

The information will be provided in a table and letter transmitting the data to DWR February 1, 2007 for Phase 1 and February 1, 2008 for Phase 2.

Timeline: See attached excel file

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Method ID: O-1433-01

WATER AND SEDIMENT-QUALITY CONSTITUENTS

Table 1.-- Selected nutrient, metals, and dating analyses in sand-pit bottom sediments on the less than 62 micron sample (Elrick and Horowitz, 1986, Horowitz, 1986, Elrick and Horowitz, 1985, and Horowitz and Elrick, 1985). USGS will provide sampling bottles, preservatives, and analysis. Lab Code 515 . Metals analyses at USGS Georgia Trace Metal Laboratory. Organics analyzed by the NWQL. FY06 Cost $850 each

Organic Nitrogen	% Moisture	Total Phosphorous
Total Carbon	% Finer than 0.62 micron	Sediment bulk density

Trace elements and organics

Aluminum	Calcium	Cadmium
Cyanide	Iron	
Potassium	Magnesium	Sodium
Phosphorus	Titanium	Gold
Barium	Beryllium	Bismuth
Cerium	Cobalt	Chromium
Copper	Europium	Gallium
Holmium	Lanthanum	Lithium
Manganese	Molybdenum	Niobium
Neodymium	Nickel	Lead
Scandium	Tin	Strontium
Tantalum	Vanadium	Yttrium
Ytterbium	Zinc	Silver
Cadmium	Mercury	Arsenic
Antimony	Selenium	Uranium
Thorium	Sulfur	Carbon, total
Carbon, inorganic	Carbon, organic	Oil and Grease

Radiochemical

Cesium-137

Table 2. Selected organic constituent analyses in sand-pit bottom sediments on the less than 62 micron sample. USGS will provide sampling bottles, preservatives, and analysis. Schedule 2501 (Foreman and others, 1995). FY06 cost $1,250 each. Detection limits 1.0 ug/kg.

Aldrin	alphs-Endosulfan	Alpha-HCH
Beta HCH	beta HCH	Chlorneb
Cis-Chlordane	cis-nonachlor	cis-permethrin
Dacthal	Dieldrin	Endrin
Heptachlor	Heptachlor epoxide	Hexachlorobenzene
Isodrin	Lindane	Mirex
O,p'DDD	o,p'DDE	o,p' DDT
Oxychlordane	p,p'DDD	p,p' DDT
P,p' methoxychlor	pentachloranisole	gross PCBs
Toxaphene	transchlordane	transNonachlor
Trans permethrin	Chlordane	Endosulfan

Table 3.-- Key parameters (Fishman, 1993; Struzeski and others, 1996; Fishman and Friedman, 1989; APHA, 1998; Patton and Truitt, 2000; Patton and Truitt, 1992, Jones and Garbarino, 1999, Thurman and others, 1990) to be analyzed on all surface water samples plus one QA sample per year. USGS collects the samples and provides analysis for all constituents. FY06 cost is $520 each

Water Temperature[1]	pH[1]
Specific Conductance	Nitrite plus Nitrate, dissolved[3]
Hardness	Total Phosphorous
Calcium, dissolved[2]	Magnesium, dissolved[2]
Sulfate, dissolved[3]	Chloride, dissolved
Suspended Sediment Concentration	Triazine Herbicide Screen, dissolved
Bicarbonate, dissolved	Alkalinity, dissolved
Total Dissolved Solids	Carbonate, dissolved
Potassium, dissolved	Iron, dissolved
Sodium, dissolved	Manganese, dissolved
Turbidity	Arsenic, dissolved
Fecal Coliform	E. Coli
Redox potential	Total Suspended Solids

Table 4.—Water-quality constituents to be analyzed on all ground-water samples and one surface water sample from each pit(Fishman, 1993; Struzeski and others, 1996; Fishman and Friedman, 1989; APHA, 1998; Patton and Truitt, 2000; Patton and Truitt, 1992, Jones and Garbarino, 1999, Thurman and others, 1990; Faire, 1993; McLain, 1993) . USGS collects the samples and provides analysis for all constituents. FY06 cost is $890 each.

Water temperature[1]	pH[1]
Specific conductance	Nitrite plus Nitrate, dissolved[3]
Hardness	Total Phosphorous
Calcium, dissolved[2]	Magnesium, dissolved[2]
Sulfate, dissolved[3]	Chloride, dissolved
Suspended Sediment Concentration	triazine herbicide screen, dissolved
Bicarbonate, dissolved	Alkalinity, dissolved
Total Dissolved Solids	Carbonate, dissolved
Potassium, dissolved	Iron, dissolved
Sodium, dissolved	Manganese, dissolved
Turbidity	Fecal Coliform
Total Coliform[3]	Ammonia, dissolved
Fluoride, dissolved[3]	Nitrite, dissolved[3]
Silica, dissolved	Orthophosphate, dissolved
Total Suspended Solids	Aluminum, dissolved
Antimony, dissolved[3]	Arsenic, dissolved[3]
Barium, dissolved[3]	Beryllium, dissolved[3]
Boron, dissolved	Cadmium, dissolved[3]
Copper, dissolved[3]	Cobalt, dissolved
Lead, dissolved[3]	Molybdenum, dissolved

Mercury, dissolved[3]
Selenium, dissolved[3]
Zinc, dissolved
Coliphage
Redox potential
Nickel, dissolved[3]
Silver, dissolved
Total Organic Carbon
Oil and grease
E. Coli

Table 5.-Analyses for dissolved pesticides and herbicides expected to be detected in surface and ground-water samples (Zaugg and others, 1995; Lindley and others, 1996; Madsen and others, 2003; Sandstrom and others, 2001) . USGS will collect samples. USGS will provide sampling bottles, preservatives, and analysis. Schedule 2003. FY06 cost is $500 each

1-Naphthol
2,6-Diethylaniline
2-[(2-Ethyl-6-methylphenyl)amino]-1-propanol
2-Chloro-2,6-diethylacetanilide
2-Ethyl-6-methylaniline
3,4-Dichloroaniline
Acetochlor
Alachlor[3]
alpha-HCH-d6
Atrazine [3]
Azinphos-methyl
Azinphos-methyl-oxon
Benfluralin
Carbaryl
Chlorpyrifos
Chlorpyrofos
cis-Permethrin
Cyfluthrin
Cypermethrin
Dacthal
Deethylatrazine
Desulfinylfipronil
Desulfinylfipronil amide
Diazinon
Diazinon-d10
Dichlorvo
Dicrotophos
Dieldrin
Dimethoate
Ethion monoxon
Fenamiphos sulfone
Fipronil
Fipronil sulfide
Fipronil sulfone
Fonofos
Iprodione
Isofenphos
Malaoxon
Malathion
Metalaxyl
Methidathion
Metolachlor
Metribuzin
Myclobutanil
Paraoxon-methyl
Parathion-methyl
Pendimethalin
Phorate
Phorate oxon
Phosmet
Phosmet oxon
Prometon
Prometryn
Propyzamide
Simazine
Tebuthiuron
Terbufos
Terbufos-O-analogue sulfone
Terbuthylazine
Trifluralin
Ethion
Fenamiphos
Fenamiphos sulfoxide

Table 6.-- EPA MCL analysis for dissolved concentrations of pesticides. USGS will collect samples. USGS will provide sampling bottles, preservatives, and analysis (Furlong and others, 2001). Schedule 2060. FY06 cost is $525 each.

2,4 -DB
Acifluorfen
Aldicarb Sulfone
Bromoxynil
2,4- D[3]
Aldicarb
Bentazon
Carbaryl
2,4,5-T
AldicarbSulfoxide
Bromacil
Carbofuran[3]

Chloramben	Chlorothalonil	Clopyralid
Dicamba	Diuron	Dinoseb[3]
Dichlorprop (2,4-DP)	Dichlobenil	DNOC
Esfenvalerate	Fenuron	Fluometuron
Linuron	MCPA	MCPB
Methiocarb	Methomyl	Neburon
1-Naphthol	Norflurazon	Oryzalin
Oxamyl[3]	Picloram[3]	Propham
Silvex (2,4,5-TP)[3]	Triclopyr	Dacthl-mono-acid
Carbofuran-3-hydroxy	Propoxur	

Table 7.--EPA MCL analysis for total recoverable volatile organic compounds expected to be detected in surface and ground-water samples (Connor and others, 1998). USGS will collect samples. USGS will provide sampling bottles, preservatives, and analysis. Schedule 1380. FY06 cost is $400 each.

Acrolein	Acrylonitrile	Benzene[3]
Bromoform[3]	Carbon Tetrachloride[3]	Chlorobenzene[3]
Dibromochloromethane[3]	Chloroethane	2-chloroethylvinyl Ether
Chloroform[3]	Bromodichloromethane[3]	1,1-dichloroethane
1,2-dichloroethane[3]	1,1-dichloroethene[3]	Dichlorodifluoromethane
1,2-trans-dichloroethene[3]	1,2-dichloropropane[3]	Ethylbenzene[3]
1,3-dichloropropylene	Bromomethane	Methylene Chloride[3]
1,1,2,2-tetrachloroethane	Tetrachloroethene[3]	Toluene[3]
1,1,1-trichloroethane[3]	1,1,2-trichloroethane[3]	Trichloroethene[3]
Trichlorofluoromethane	Vinyl Chloride[3]	Chloromethane
1,2-Dibromoethane(EDB)[3]	1,2-Dichlorobenzene	1,3-Dichlorobenzene[3]
1,4-Dichlorobenzene[3]	Cis-1,3-dichloropropene	Trans-1,3-dichloropropene
Styrene[3]	Xylenes (o,p,m)[3]	1,2-dibromo-3-chloropropane[3]
Bromobenzene	Methyltertbutylether	Bromochloromethane
Cis-1,2-dichloroethene[3]	Isopropylbenzene	n-Propylbenzene
Tert-butylbenzene	1,2,4-Trimethylbenzene	Sec-butylbenzene
p-Isopropyltoluene	n-Butylbenzene	1,2,4-Trichlorobenzene[3]
Hexachlorobutadiene	Naphthalene	1,2,3-Trichlorobenzene
Trichlorotrifluoroethane	1,3,5-Trimethylbenzene	1,1-Dichloropropene
Dibromomethane	2,2-Dichloropropane	1,3-Dichloropropane
1,1,1,2-Tetrachloroethane	1,2-Chlorotoluene	1,2,3-Trichloropropane
1,4-Chlorotoluene		

Table 8.--EPA MCL analysis for dissolved radionuclides. USGS will collect samples. USGS will provide sampling bottles, preservatives, and analysis. Schedule 1644. FY06 cost is $150.

Gross beta radiation[3]	Gross alpha radiation[3]

1-16

Table 9.--EPA MCL analysis for total recoverable concentrations of acid and base/neutral organic compounds. USGS will collect samples. USGS will provide sampling bottles, preservatives, and analysis. Schedule 1383 (Wershaw and others, 1987). FY06 cost is $500 each.

Acid Compounds

2-chlorophenol	2,4-dichlorophenol	2,4-dimethylphenol
4,6-dinitro-o-cresol	2-nitrophenol	4-nitrophenol
P-chloro-m-cresol	Pentachlorophenol[3]	Phenol
2,4,6-trichlorophenol	1,2,4-trichlorobenzene	

Base/Neutral Compounds

Acenapthylene	Acenaphthene	Anthracene
Benzidine	Benzo-A-Anthracene[3]	Benzo-A-Pyrene[3]
3,4-benzofluoroanthene	2,,4-benzo(ghi)perylene	Benzo(K)fluoranthene[3]
Bis(2-chloroethoxy)Methane	Bis (2-chloroethyl) Ether	Bis(2-chloroisopropyl) Ether
Bis (2-ethylhexyl) Phthalate	4-bromophenyl Phenyl Ether	Butylbenzyl Phthalate
2-chloronaphthalene	4-chlorophenyl Phenyl Ether	Chrysene
Dibenzo (a,h) anthracene[3]	1,2-dichlorobenzene	1,3-dichlorobenzene
1,4-dichlorobenzene	3,3'-dichlorobenzidine	Diethyl phthlate
Dimethyl phthlate	Di-n-butyl Phthalate[3]	2,4-dinitrotoluene
2,6-dinitrotoluene	Di-n-octyl Phthalate	1,2-diphenylhydrazine
Fluoranthene	Fluorene	Hexachlorobenzene[3]
Hexachlorobutadiene	Hexachlorocyclopentadiene[3]	Hexachloroethane
Indeno (1,2,3-cd)Pyrene	Isophorone	Napthalene
Nitrobenzene	N-nitrosodimethylamine	N-nitrosodi-n-propylamine
N-nitrosodiphenylamine	Phenanthrene	Pyrene

Table 10. Analyses for BTEX compounds in water (Conner and others, 1998). Samples to be analyzed on all ground-water samples and one surface-water sample. USGS collects the samples and USGS National Water Quality Laboratory provides analysis for all constituents. Schedule 1378. FY 06 cost per sample $160 each.

Benzene, total

1, 4-Bromofluorobenzene, total

Ethylbenzene, total

1,2 Dichloroethane-d4, total

m- and p- Xylene, total

tert-Butyl methyl ether, total

o-Xylene, total

Toluene, total

Toluene-d8, total

Xylene, total

[1]--must be analyzed immediately after sample collection.

[2]– required for calculation of hardness.

[3]– on EPA MCL list

Appendix 1. Table 1—Groundwater Pit Site Selection Criteria

Condition	Site #	Description	Hypothesis
Rural Land – Pasture & Range	1		1. In the absence of regional industrial impacts, sho[illegible]resent near un-im[illegible] water quality conditions.
	2	Pit, recently constructed Down gradient	2. Elevated mineralization due to evaporation from pit 3. Possible impacts surface runoff from pasture and range.
	3	Pit, recently constructed Up gradient	4. Expect similar conditions as Site 1.
	4	Pit, old construction Down gradient	5. Elevated mineralization due to evaporation from pit most likely greater than site 2. 6. Possible impacts surface runoff from pasture - range most likely greater than site 2.
	5	Pit, old construction Up gradient	7. Expect similar conditions as Site 1.
Rural Land – Cropland	6	No Pit	8. Assuming no regional industrial impacts, nitrate concentrations greater than that found at Site 1. 9. Detectable concentrations of agricultural pesticides, especially atrazine if corn and grain sorghum production is a predominate activity.
	7	Pit, newly constructed down gradient	10. Elevated mineralization due to evaporation at level similar to site 2. 11. Higher concentrations of nitrate than site 6. 12. Same pesticides found at site 6 at higher concentration. 13. Greater diversity of pesticides than site 6.
	8	Pit, newly constructed , up gradient	14. Similar results as Site 6.
	9	Pit, old construction Down gradient	15. Elevated mineralization due to evaporation at level greater than site 7. 16. Higher concentrations of nitrate than site 7. 17. Same pesticides found at site 7 at higher concentration. 18. Greater diversity of pesticides than site 7.
	10	Pit, old construction Up gradient	19. Similar results as Site 6.
Residential On-site Wastewater Treatment (septic tank lateral field or lagoon)			
Residential, new development	11	No pit	20. Elevated nitrate concentrations relative to site 1. 21. Detectable concentrations of refined petroleum products from vehicle fluid leaks. 22. Detectable concentrations of pesticides used in residential landscaping and building maintenance.
	12	Pit, Down gradient	23. Elevated mineral concentrations due to both evaporation and surface runoff of deicing minerals; concentrations likely greater than Sites 7 and 9. 24. Higher concentration of the pesticides found at site 11. 25. Greater diversity of pesticides relative to site 11. 26. Greater diversity of refined petroleum products relative to site 11.
	13	Pit, Up gradient	27. Similar to site 11.
Residential, old established development	14	No pit	28. Elevated concentrations of nitrates relative to site 11. 29. Refined petroleum products similar to site 11 at higher concentrations than site 11. 30. Greater diversity of refined petroleum products than found at site 11. 31. Detectable concentrations of pesticides used in residential landscaping and building maintenance.
	15	Pit, Down gradient	32. Elevated mineral concentrations due to both evaporation and surface runoff of deicing minerals; concentrations likely greater than site 12. 33. Higher concentration of the pesticides found at site 11. 34. Nitrate concentrations elevated relative to site 14 due to possibility of surface runoff of fertilizers.
	16	Pit, Up gradient	35. Similar to site 14.
Residential, public sewer			
Residential, new development	17	No pit	36. Similar to site 11.
	18	Pit, Down gradient	37. Elevated nitrate concentrations relative to site 1, but lower than site 11. 38. Detectable concentrations of refined petroleum products from vehicle fluid leaks. 39. Detectable concentrations of pesticides used in residential landscaping and building maintenance.
	19	Pit, Up-gradient	40. Similar to site 11.
Residential, old development	20	No pit.	41. Similar to site 14.
	21	Pit, Down-gradient	42. Nitrate concentrations elevated relative to site 11 but lower than site 28. 43. Refined petroleum products similar to site 14. 44. Greater diversity of refined petroleum products than found at site 11. 45. Detectable concentrations of pesticides used in residential landscaping and building maintenance.
	22	Pit, Up-gradient	46. Similar to site 14.

Appendix 2. Table 2--Sample Constituent List

Inorganic Chemi	Information Source*	
Ammonia	WSW	
Chloride	WGW	
Iron	WGW	
Magnesium	WGW	
Manganese	WGW	
Nitrate	WGW	WSW
Oil & Grease	WSW	
Phosphorous	WGW	
Sodium	WGW	
Sulfate	WGW	
Total Dissolved Solids	WGW	WSW
Total Suspended Solids	WSW	
Bacteriological		
Fecal Coliform	WGW	WSW
Fecal Strep	WSW	
Escherichia coli (E-coli)	WQC	
Metals & Cyanide		
Aluminum	WGW	
Antimony	NURP (13%)	
Arsenic	WGW	NURP (> 50%)
Beryllium	NURP (12%)	
Cadmium	NURP (48%)	
Chromium	NURP (58%)	
Cobalt	WGW	
Copper	WGW	WSW
Cyanides	WSW	NURP (23%)
Lead	NURP (94%)	
Molybdenum	WGW	
Nickel	WGW	NURP (20-49%)
Selenium	WGW	NURP (11%)
Silver	WSW	
Zinc	WGW	WSW
Volatile Organic Compounds		
cis-1,2-Dichloroethylene	WGW	
Dichloromethane (methylene chloride)	NURP (11%)	
1,1,1-Trichloroethane	WGW	
Trichloroethylene	WGW	
tert-Butyl methyl ether (MTBE)	WGW	
Tetrachloroethylene	WGW	
Acid Extractable Compounds		
4-Nitrophenol	NURP (10%)	
Pentachlorophenol	NURP (19%)	
Phenol	NURP (14%)	
Base Neutral Compounds		
Chrysene	NURP (10%)	
Fluoranthene	NURP (16%)	
Phenanthrene	NURP (12%)	
Bis (2-ethylhexyl) phthalate	NURP (22%)	
Pyrene	NURP (15%)	
Pesticides		
Atrazine	WGW	
Chlordane	NURP (17%)	
Deethylatrazine	WGW	
α - Endosulfan	NURP (19%)	
α - Hexachlorocyclohexane (α - BHC)	NURP (20%)	
γ - Hexachlorocyclohexane (γ - BHC)	NURP (15%)	
Malathion	WSW	
Metolachlor	WGW	
Simazine	WGW	

*Information Source: WGW = USGS Quality of Shallow Ground Water in Areas of Recent Residential and Commercial Development, Wichita, Kansas, 2000 Report; WSW = 2002 and 2003 Wichita Annual NPDES Stormwater Reports; NURP = Nationwide Urban Runoff Program Report (EPA, 1983) Note: The referenced % relates to the number of cities which

Standards for Surface Waters

RDHE Water Quality Criteria

Ground-water pits study timeline and task budget

Prepared: 1/13/2006

1-22

Timeline

Task
(Phase 1 and Phase 2 are offset by one year)

	Feb-Mar 06	Apr - June 06	July-Sept 06 Phase 1-(4 pits)	Oct-Dec 06	Jan-Mar 07	Apr - June 07	July-Sept 07 Phase 2-(2 pits)	Oct-Dec 07	Jan-Mar 08
1. Inventory and site recon. Inventory provided to USGS Select 4 pits by March 1, 2006 and 2 pits by March 1, 2007									
2. Collect pit bottom-sediment samples									
3. Quantify surface water quality in pits from March- June 2006 and 2007 Collect water samples after storm events (3 samples/storm event per pit)									
4. Collect ground-water quality samples (1 sample per well per pit)									
5. Review data as received from Laboratories									
6. Quality-assure data and deliver to DWR by February 1, 2007 (Phase 1) and February 1, 2008 (Phase 2)									

Budget by Agreement Period

Prepared: 1/13/2006

Management Class Budget Estimate	Total Costs	Mar. 1, 2006 thru Feb. 28, 2007 (4 pits+1 QA)	Mar. 1, 2007 thru Feb. 28, 2008 (2 pits)
Sampling salaries for sediment, pit, and ground water samples	$64,100	$42,000	$22,100
6 pits (4 in 2006; 2 in 2007) will be sampled and 3 shallow wells per pit			
One sediment sample collected from each pit and analyzed for tables 1-2 Grab core? Sample and composite the upper 12 inches for analysis.			
3 water samples collected after storms in water column-analyze for bact and sed, 1 sample each pit analyzed for tables 3-10			
1 sample from each well collected after collection of storm sample from pit. Collect ground water samples within 1 week of collection of SW samples.			
QA samples equal about 10 percent of the total			
Analytical			
Surface water and Pit sample analysis			
Sediment samples Tables 1-2: 1 sample per pit + 1 QA in 2006	$14,900	$10,500	$4,400
Bacteria and sediment samples (3 samples per pit at $150/sample)	$2,800	$1,800	$1,000
Table 3 analysis (2 per pit + 1 QA in 2006)	$6,900	$4,700	$2,200
Tables 4-6 analysis (1 per pit + 1 QA in 2006)	$13,600	$9,600	$4,000
Tables 7-10 analysis (1 per pit + 1 QA in 2006)	$8,600	$6,100	$2,500
Ground-water sample analysis			
Tables 4-6 analysis (1 sample per well, 3 wells per pit + 1 QA in 2006)	$37,000	$24,900	$12,100
Tables 7-10 analysis (1 sample per well, 3 wells per pit + 1 QA in 2006)	$23,300	$15,700	$7,600
Analytical subtotal	$107,100	$73,300	$33,800
Sampling supplies, vehicle costs, travel & per diem, misc.	$26,700	$17,700	$9,000
Project management, meeting attendance, data review and delivery of data tables	$60,000	$35,000	$25,000
Estimated study total	$257,900	$168,000	$89,900
Average cost per pit	$43,000		
Funding sources and Joint Funding agreements:			
Sedgwick County			
USGS cooperative matching funds			
Agreement total			
Kansas Water Office			
USGS cooperative matching funds			
Agreement total			
State and/or Local agencies			
USGS cooperative matching funds			
Agreement total			
Totals			
State and local agencies	$257,900	$168,000	$89,900
USGS cooperative matching funds	$188,900	$123,000	$65,900
	$69,000	$45,000	$24,000

82a-303b

Chapter 82a.--WATERS AND WATERCOURSES
Article 3.--OBSTRUCTIONS IN STREAMS

82a-303b. Inspection of dams by chief engineer; access to private property; costs of inspection.

(a) (1) In order to secure conformity with adopted rules and regulations and to assure compliance with the terms, conditions or restrictions of any consent or permit granted pursuant to the provisions of K.S.A. 82a-301 through 82a-303, and amendments thereto, the chief engineer or an authorized representative of the chief engineer shall have the power and the duty to inspect any dam or other water obstruction. Upon a finding pursuant to subsection (a) of K.S.A. 82a-303c, and amendments thereto, by the chief engineer that a dam is unsafe, the chief engineer shall order an annual inspection of the dam until it is either in compliance with all applicable provisions of this act, any rules and regulations promulgated pursuant to this act, permit conditions and orders of the chief engineer; or the dam is removed. The safety inspection shall be conducted by the chief engineer or authorized representative and the cost shall be paid by the dam owner. Except as provided in K.S.A. 82a-303b(a)(4), the class and size of a dam provided for by the provisions of this act shall be defined by rules and regulations adopted by the chief engineer pursuant to K.S.A. 82a-303a, and amendments thereto.

Inspection fees are as follows:

Size of Dam Inspection fee
Class 1 $1,500
Class 2 $1,500
Class 3 $2,500
Class 4 $4,000

(2) Except as provided in K.S.A. 82a-303b(a)(5), each hazard class C dam shall be required to have a safety inspection conducted by a licensed professional engineer qualified in design, construction, maintenance and operation of dams once every three years, unless otherwise ordered by the chief engineer.

(3) Except as provided in K.S.A. 82a-303b(a)(5), each hazard class B dam shall be required to have a safety inspection conducted by a licensed professional engineer qualified in design, construction, maintenance and operation of dams once every five years unless otherwise ordered by the chief engineer.

(4) (a) The chief engineer shall not change the size or hazard class of any dam to a larger size class or higher hazard class after the dam has been built, regardless of downstream development or construction, unless the dam in question has been voluntarily structurally modified to a larger size or impoundment after the downstream construction in question.

(b) Any dam in existence prior to the passage of this act that the chief engineer has re-classified to a larger size or hazard class due to downstream development or construction shall be re-classified to its assigned classification at the time of the dam's construction or its most recent voluntary structural modification.

(c) The provisions of subsection (a) and (b) shall only apply after the owner or operator of the dam in question has notified local emergency management personnel of the presence of the dam.

(5) A dam is not required to have a safety inspection if the only lives or property continuously endangered by the dam are the lives or property of the dam owner or operator or their immediate family.

(5) Within 60 days of the date of inspection, a report of the inspection shall be provided to the chief engineer by the licensed professional engineer who conducted the inspection. The report shall document the physical condition of the dam, describing any deficiencies observed, an analysis of the capacity of the dam and its spillway works, compliance of the dam with approved plans and permit conditions, changes observed in the condition of the dam since the previous inspection, an assessment of the hazard classification of the dam including a statement that the engineer either agrees or disagrees with the current classification, and any other information relevant to the safety of the dam or specifically requested by the chief engineer.

(6) Upon failure of a dam owner to comply with the applicable inspection interval, the chief engineer or such chief engineer's authorized representative shall conduct a mandatory inspection of the dam and the costs as established by this act for the inspection shall be paid by the owner, in addition to any other remedies provided for violations of this act.

(7) The failure to file a complete and timely report as required by the provisions of this act, or the failure to submit the fees assessed for inspections conducted by the chief engineer or such chief engineer's authorized representative shall be deemed a violation of this act and subject to the penalties provided by K.S.A. 82a-305a, and amendments thereto.

(b) For the purpose of inspecting any dam or other water obstruction, the chief engineer or an authorized representative of the chief engineer shall have the right of access to private property. Costs for any work which may be required by the chief engineer or the authorized representative prior to or as a result of the inspection of a dam or other water obstruction shall be paid by the owner, governmental agency or operator of such dam or other water obstruction.

(c) All fees collected by the chief engineer pursuant to this section shall be remitted to the state treasurer as provided in section 5, and amendments thereto.

Proposed Legislation

Amending KSA 49-601 et. seq. to establish Natural Resource Development Zone

- A county commission may establish Natural Resource Development Zone
- Upon securing available natural resources for the development of a mine an operator may petition the county commission or commissions within which borders the proposed mine is located, requesting the establishment of a natural resource development zone.
- Upon approval by the county commission such zone shall have a boundary of 2 miles from the property line of the proposed mine.
- The county or counties shall issue a certificate and the original certificate shall be sent to the operator and shall be recorded with the register of deeds in the county or counties wherein the zone has been established and shall be recorded on all property of record within the boundaries of the zone, as are other instruments affecting real estate.
- The provisions of this section shall not restrict the use of land or development of land within the zone.
- Such information shall constitute constructive notice of the activities and shall serve as an affirmative defense to any nuisance claims arising from the noticed activity.

K A N S A S

RODERICK L. BREMBY, SECRETARY

DEPARTMENT OF HEALTH AND ENVIRONMENT

KATHLEEN SEBELIUS, GOVERNOR

Presentation on the Kansas Department of Health and Environment Division of Environment Services to House Environment Committee

Presented by Roderick L. Bremby, Secretary
Kansas Department of Health and Environment

January 24, 2006

Representative Freeborn and members of the House Environment Committee, I am pleased to appear before you today to provide an overview of the Division of Environment at the Kansas Department of Health and Environment.

The mission of the Division of Environment is *protecting public health and environment for Kansas.* To implement this mission, the Division of Environment has adopted the following goals:

> Implement environmental programs in Kansas to achieve regulatory compliance and maintain assurance that environmental programs are protective of public health and the environment.
>
> Be responsive to the needs and inquiries of the citizens of Kansas and the regulated community with respect to environmental programs.
>
> Provide citizens of the state with accurate assessments of the environmental conditions of the state.

In order to fulfill this mission and meet these goals the Division of Environment has developed and implemented regulatory, compliance assistance, monitoring and educational programs within each of the bureaus and the division as a whole.

The performance measures for the Division of Environment are described at length in the state fiscal year 2007 KDHE budget request document. The results of the division's activities are also

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House Environment Committee
1-24-2006
Attachment 4

listed in that document. In addition, the division also operates under the terms of the various program delegation agreements with the US EPA, Nuclear Regulatory Commission, and Office of Surface Mining, Department of Interior. The relationship with US EPA is described in the *Performance Partnership Agreement, October 1, 2003 to September 30, 2006.*

The Division of Environment is involved in a number of challenging activities. These include continued engagement over the regulation of animal feeding operations; water quality standards and designation of surface waters; development of Total Maximum Daily Loads (TMDLs) for streams and lakes; implementation of revised public water supply standards; implementation of new air quality standards for ozone; permitting of new or expanded solid waste facilities; and a number of remediation sites across the state. Current regulatory proposals of note are those for regulation of underground storage of natural gas and liquid petroleum gas (LPG), water quality standards, air quality, surface mining and groundwater. In addition, the Division of Environment will continue to move forward in areas involving financial assistance including the state revolving loan funds, start up of the Brownfields program, and storage tank cleanup activities. Brief descriptions are also available on the KDHE website www.kdhe.state.ks.us under the Environment tab.

Division of Environment Organizational Structure:

The Division of Environment is organized in five distinct bureaus: Bureau of Air and Radiation, Bureau of Water, Bureau of Waste Management, Bureau of Environmental Remediation, and Bureau of Environmental Field Services. For simplicity in budgeting, the Office of the Director, Division of Environment is budgeted with the Bureau of Environmental Field Services. The division staff is composed of scientific and technical staff with a heavy emphasis on physical and biological sciences, and engineering. The staff of the Division is authorized at 464 FTEs.

The **Bureau of Air and Radiation** is the state's air quality regulatory program including radiation safety. The bureau implements state and federal programs for permitting and regulation of air emission sources. These sources include the state's coal burning power plants, industrial plants, and other industry. Of particular concern are air quality conditions in the Kansas City and Wichita areas related to these point sources and mobile sources, i.e. automobile and truck exhaust. This bureau conducts the radiation regulatory programs, that deal both with the licensing and monitoring of devices such as X ray and mammography equipment and the environmental and response programs for the Wolf Creek nuclear power plant located near Burlington. The staff of this bureau also implements the community right to know program in conjunction with the Division of Emergency Management, asbestos regulatory programs, ambient air quality monitoring and the Small Business Assistance Program.

- A new standard has been recently established for ozone, a component of smog. The standard was not exceeded in the Kansas City metropolitan area for the 2003-2005 time frame due to climatic conditions. However, there may be a future violation of the ozone standard Kansas City area under more normal conditions. The ozone levels in Wichita have also been of concern. The Bureau of Air and Radiation is working with both Kansas City and Wichita to evaluate ways to reduce air emissions that contribute to ozone

formation. Once this work has been completed the Kansas Air Quality Plan will be amended to make sure Kansas continues to meet the new federal standards for ozone.

The **Bureau of Waste Management** conducts regulatory, compliance assistance, and public education programs for both solid and hazardous waste. The bureau oversees all permitting activity related to over 500 waste management facilities including municipal solid waste landfills, construction and demolition landfills, transfer stations, composting facilities, household hazardous waste facilities, waste processing facilities (oil, tires, sludges, etc.), and hazardous waste treatment, storage, and disposal facilities.

The solid waste program provides technical assistance and annual workshop training to all facility owners and operators. Hazardous waste program regulates the generation, handling, treatment and disposal of characteristic and listed hazardous waste in a "cradle to grave" approach administering both state and federal statutes and regulations. The decade-old waste tire program has made tremendous strides in reducing the number of waste tire piles across the state and overseeing an ongoing system to manage newly generated tires. The solid waste program also includes illegal dump clean-up performed in cooperation with local governments. The bureau works together with the Bureau of Environmental Remediation to address former city dumps which threaten the public health and environment. The bureau also administers grant programs to encourage the development or enhancement of service related to recycling, composting, and household hazardous waste collection.

The bureau originated the agency's *Kansas Don't Spoil It* public education initiative in 1996 and continues to provide information to the public at large and in schools. The bureau is also working with confined feeding operations to develop contingency plans for disposal of a large number of animal carcasses in the event of a foreign animal disease.

- E-waste management continues to be a significant emerging waste management issue in Kansas (and in the USA). Millions of computers are awaiting disposal or recycling in Kansas. Recycling opportunities are expanding in Kansas but there are still inadequate services in most small to medium-sized communities. This could be a problem if the federal government implements strict regulations prohibiting landfilling of these wastes.

- Waste Connections, Inc. received a permit to build a landfill in Harper County in the fall of 2005 after years of review and controversy. The landfill received its first waste last week (Jan. 16-20). Parties who opposed the issuance of a permit for this landfill haved filed lawsuits which are still under consideration in the courts.

- The Illegal Dumping Program, working in cooperation with Barton County, will soon complete clean-up efforts in South Hoisington where illegal dumping of tires, household hazardous wastes, and miscellaneous solid waste has been a problem on 70 separate properties for many years. This was the largest clean-up action under the illegal dump program since it was initiated in 2000.

The bureau has approved of over 200 burial sites for animal carcasses at large confined feeding operations in case a contagious foreign animal disease strikes Kansas.
The bureau has overseen a special small landfill audit program funded by a special grant from the U.S. Department of Agriculture to provide advice and guidance on landfill operations to about 30 counties in western Kansas.

The **Bureau of Water** is the lead environmental regulatory program for actual and potential discharges to water and the protection of the states' public drinking water supplies. The bureau implements the delegated National Pollution Discharge Elimination System (NPDES) program for the regulation of municipal, industrial and animal waste. To assist the regulatory programs, the Bureau of Water also conducts state and federal programs to limit pollution caused by non-point sources. The bureau also conducts regulatory and assistance programs for the assurance of the safety of the state's public water supplies. This bureau administers state revolving loan funds to assist municipalities and public utilities in improving or replacing sewer or municipal wastewater systems and public water supplies. The two revolving loan funds have made approximately $750 million in loans since their inception.

Stream Classification and Use Designation Activity:

- Statute requires KDHE to perform two major tasks related to stream classifications:

    1. Evaluate the classification status of stream segments against the criteria for classification of stream segments provided in K.S.A. 82a-2003.

    2. Evaluate the designated uses of classified streams against the criteria for use designation of classified stream segments provided in K.S.A. 82a-2004.

- In the near future the department will publish the draft regulations on the annual update to the Kansas Surface Water Quality Register. These regulations will propose recreational uses for 658 stream segments, aquatic life uses for two stream segments, and designated uses for 89 lakes. Seventy-nine stream segments are proposed for deletion from the Kansas Surface Water Register (removed from classification), 356 stream segments are proposed as secondary contact recreation, and 223 stream segments are proposed as primary contact recreation.

Drinking Water

- New federal regulations, which consist of stricter standards for drinking water quality, are a challenge, especially for Kansas communities due to the many small systems in the state. Ninety-five percent (95%) of Kansas water supplies serve 3,300 people (1000 water meters) or less, 55% of Kansas water supplies serve 330 people (100 water meters) or less. There is no economy of scale for these small systems so some are challenged to upgrade to federal requirements, and consolidation is not always an option for them.

Municipal Wastewater

For municipal wastewater, an emerging issue lies with the discharge of endocrine disrupters. It is a potential human health concern. Research is underway including whether to remove compounds at wastewater plant or waterworks or both. The issue is more of a problem with heavily recycled streams such as Kansas River.

Mega Dairies

- Kansas now has 26 dairies permitted for 1,000 or more animal units with the largest at 45,000 animal units. KDHE oversees the facility management of wastes and determines proper corrective actions needed when problems are identified.

Total Maximum Daily Loads

- KDHE has met the deadlines of the Federal Court Order and we anticipate the first round of TMDL's for the 12 basins will be met.

Water Quality Standards

- Implementation of SB204 & HB2219 continues. EPA has approved most provisions with exception of cost/benefit considerations in stream classification, a provision of state law, and an agency regulations proposal called high flow exclusion.

- Nutrient reduction plan: KS adopted a unique approach to reducing nutrients. The plan is to move forward with voluntary reductions while addressing and setting nutrient criteria locally.

Lagoon Regulations

- KDHE has adopted regulations to address the construction of wastewater lagoons. Initial attempts at lagoon regulations grouped the brine lagoons, livestock, industrial, and municipal wastes. This proved difficult, as each group is essentially a category by itself. The draft regulations were broken into the categories described above. The brine lagoon, municipal lagoon and industrial lagoon regulations are in place. Livestock lagoon regulations have been delayed due to delays in federal regulations resulting from court rulings.

Geologic Issues

- Following the Hutchinson gas incident, legislation was adopted and regulations put in place addressing underground storage of natural gas and liquids. The industry is implementing these regulations.

- KDHE staff continues to monitor a sink hole near the old Carey Salt plant in Hutchinson. The sink hole is associated with a brine well from the 1920 era and is about 20' deep and 80' in diameter. The sink is next to the main railroad line. Our first concern is with public safety, secondly the groundwater pollution. The Hutchinson area is dotted with old brine wells.

The **Bureau of Environmental Remediation** is charged with the responsibility for cleanup of environmental damages across the state. These cleanups are conducted in a variety of programs

ranging from federal Superfund to the state voluntary programs. These cleanups are predominantly conducted using either federal funds or charges to the responsible parties. In recent years, the bureau has seen the maturation of programs such as the state underground and above ground storage tank regulatory and cleanup program, the voluntary and cooperative cleanup programs, and state water plan funded orphan site remedial program. In addition, new programs for remediation of illegal methamphetamine lab sites, remediation of contamination from dry cleaning operations and restoration of property under the Brownfields approach have been implemented. The former is funded with state funds while the latter is funded with federal grants.

- The Kansas Meth Watch program is being adopted on an international scale. Meth Watch is a voluntary program for retailers created by KDHE and KBI to limit the availability of precursor products that are used in the manufacturing of methamphetamine in clandestine laboratories. Due to the success of the Kansas program, Meth Watch is currently being adopted in 23 other states and Canada. In 2005, the Kansas legislature passed the Matt Samuels Chemical Control Act, which made pseudoephedrine a Schedule 5 Substance, and required the powder and tablet forms of the drug to be sold by a pharmacy. This change has reduced the number of meth labs to which KDHE has had to remediate. In FY 2005, KDHE cleaned up 213 labs, and in the first six months of FY 2006 KDHE cleaned up 60 labs, which represents a 44% reduction. KDHE is now responding to an average of 10 labs per month.

- Reauthorization of the fee collection aspects of the surface mining program will have significant impact on the funding of the Surface Mining Section. Collection of fees, as provided for by Title IV, of the Surface Mining Control and Reclamation Act of 1977 (SMCRA), to fund the remediation of hazards associated with past coal mining is set to expire on June 30, 2006. If this provision of SMCRA is allowed to expire there will no longer be funding for the Abandoned Mine Land (AML) Program. Kansas has the fourth largest inventory of Priority 1 and 2 abandoned coal mine hazards in the nation with an estimated cost of over $200 million to address, so there is much work left to be done in this state.

- The recent declining economy has left many businesses unable to address their environmental obligations at sites where soil and groundwater contamination have occurred. Many of these sites pose a substantial risk to the water supplies and public health of the residents of Kansas. Obtaining adequate funding to respond to these threats to human health and the environment at orphan sites is increasingly important. For several years funding levels for orphan site remediation and for Superfund cost share have been declining.

- The agency lacks sufficient funds to respond to Cherokee County mining sites and impacts to surface waters and match for federal superfund cleanups. Funding from Congress has been requested to begin a comprehensive cleanup of the lead and zinc mine waste in Cherokee Co. The agency has been informed that no money will be provided this year and any future allocations will involve a minimum of a 10% match from the state.

- The Bureau of Environmental Remediation is currently working with a national work group to develop standards for vapor intrusion testing at sites where soil and groundwater are contaminated by volatile organic compounds. Vapor intrusion is the migration of volatile chemicals in the subsurface into overlying buildings. Volatile chemicals in groundwater can emit vapors that may migrate through subsurface soils and into indoor air spaces of overlying buildings. This vapor intrusion pathway is a significant health pathway (inhalation pathway) and should be included in the assessment process prior to the redevelopment of contaminated sites. EPA and several states are working to determine what contaminant levels are protective of occupants.

- With the ever present need for economic growth and redevelopment, the Brownfields program offers communities an excellent opportunity to return underutilized properties to productive use. The department has been awarded funding from EPA to conduct and support brownfields activities in the State of Kansas. The agency conducts assessments of property for local municipalities who are trying to redevelop underutilized properties within their communities. These assessments are conducted at no cost to the local government to determine the extent of contamination. Assessments can be performed before they take title to the property. As of December 31, 2005, a total of 73 assessments at over 200 properties have been completed with another 6 currently underway (including the redevelopment of the riverfront in Downtown Topeka and in Wichita along the 21st Street Corridor).

- The Bureau also provides technical assistance to support municipalities and other local economic development organizations across the state. This program is an excellent example of the shift in the agency role from strict regulator to that of a support agency. The outcome for the agency will be cleanup of contaminated properties with a benefit for local communities of redevelopment of underutilized property that will produce jobs, increase the tax base or other benefits such as creating a park or residential area.

The **Bureau of Environmental Field Services** provides service to the public and other Division of Environment bureaus through regulatory and compliance efforts, complaint and emergency response, ambient monitoring and pollution prevention efforts. This bureau often serves as the public's first point of contact for investigation and assistance. There are six district offices: Chanute, Wichita, Dodge City (with a satellite office in Ulysses), Hays, Salina and Lawrence. Some staff are located in the Topeka offices. The activities of the bureau staff cross all program lines of the regulatory programs of Air, Water, Waste Management and the tank programs of Environmental Remediation. In addition, this program provides support for the Bureau of Water's implementation of the Clean Water Act through performance of UAAs and sampling for the TMDL program. The activities of the bureau are implemented under working agreements between BEFS and the other four bureaus. It should be noted the district office clerical staff provide service to both Division of Health and Division of Environment staff in the offices.

Division of Environment Budget and Finance Information:

The Division of Environment utilizes a mixture of state general funds, federal funds, state water plan funds and fees to support programs and activities. Expenditures for state fiscal year 2006 and 2007 reflect this mixture of funding sources. The total budget for fiscal year 2007 is

approximately $55 million with fees accounting for 54.7%, federal funds for 28.9%, state general fund for 9.4% and state water plan for 7.0%. The total budget for fiscal year 2006 is approximately $58 million with fees accounting for 54.9 %, federal funds for 28.6%, state general fund for 8.8%, and state water plan for 7.7%.

The Division of Environment administers two significant revolving loan funds that are not routinely included in the agency budget. These are the Water Pollution Control Revolving Fund and Public Water Supply Loan Fund and were described earlier. Annual reports for both are routinely prepared and submitted.

Other KDHE Divisions:
In addition to the Division of Environment, KDHE includes 3 other operational divisions, the Division of Health, the Division of Health and Environmental Labs, and the Center for Health and Environmental Statistics. Two support divisions, the Division of Fiscal Services and the Division of Human Resources and Service Quality, provide a centralized resource for internal fiscal, personnel and employee needs for the agency.

Division of Health:

KDHE's Division of Health is responsible for investigating disease outbreaks and taking steps to prevent the spread of communicable diseases, as well as preparing for bioterrorism acts against the state. In addition, the Division of Health promotes healthy lives by developing and supporting programs to reduce the preventable chronic diseases and promote health activities such as good nutrition and physical activity. The division also provides assistance to Kansas communities in establishing or modifying health care delivery. It is also responsible for ensuring children's special needs are addressed through screenings and treatments and the administering of two USDA programs: the Commodity Supplemental Food Program (CSFP) and the Special Supplemental Nutrition Program for Women, Infants, and Children (WIC). Division of Health also licenses and regulates numerous facilities in the state including child care, hospitals, home health agencies/ mental health facilities/ restaurants / and food service facilities. Credentialing of health care workers is also the responsibility of the Division of Health. Also housed within the Division of Health is the Center for Health and Environmental Statistics (CHES).
CHES provides reliable public health statistics by collecting and processing data regarding various health and environmental issues in the state. Vital records including births, deaths, marriages and divorces in Kansas are recorded by this office and made available to individuals according to Kansas law. Health care information data, such as worker's compensation insurance and health insurance data, are collected and studied to determine trends.

Division of Health and Environmental Laboratories (DHEL):

DHEL provides timely and accurate analytical information for public health, and certifies laboratories in the state to assure the quality of services provided. State lab information is used to diagnose and prevent diseases of public health interest that range from AIDS to childhood lead toxicity. DHEL surveillance information also guards the safety of public drinking water as well as ambient air and water quality. Health and environmental analytical operations are performed in accordance with rigid scientific standards.