

KANSAS DRY CLEANING PROGRAM

Assessment and Restoration Section - Bureau of Environmental Remediation Response & Remediation Unit – Joseph Dom, P.G., Unit Manager

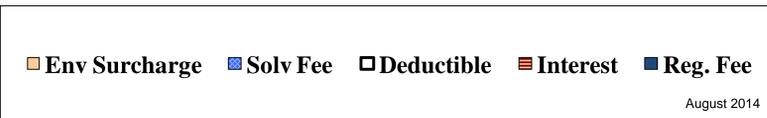
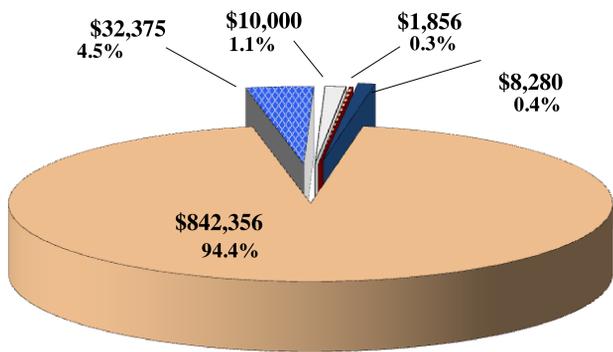
The Kansas Dry Cleaning Program was created when the Kansas Drycleaner Environmental Response Act became effective on July 1, 1995. The Program addresses facility registration, pollution prevention, and soil and groundwater contamination at retail dry cleaning facilities. A Dry Cleaning Facility Release Trust Fund (DFRTF) was developed as a funding mechanism for conducting state-led investigations and remediation of soil and ground water contamination at sites that have applied and been accepted into the Dry Cleaning Facility Release Trust Fund.

Dry Cleaner Environmental Response Act

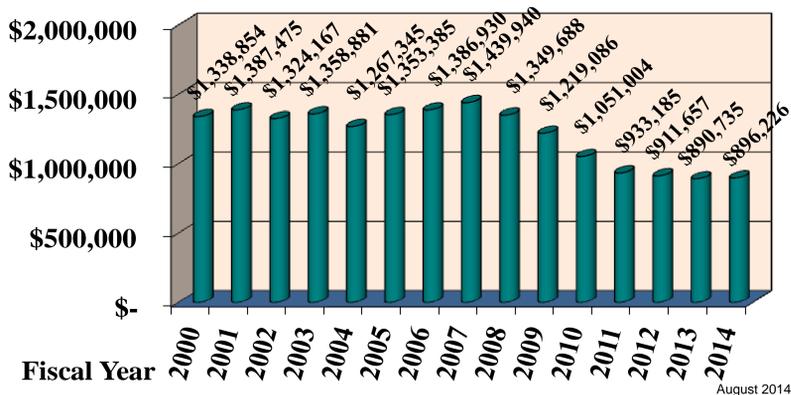
- Enacted July 1, 1995;
- Act was written and presented to the Legislature by the Dry Cleaning industry;
- Each facility is required to register annually with KDHE-BER;
- Requires proper storage and disposal of solvent containing wastes;
- Compliance with September 22, 1993 U.S. E.P.A. National Emission Standards for Hazardous Air Pollutants (NESHAP);
- Requires containment structures around and impervious materials under machines;
- Requires delivery of solvents via closed, direct-coupled delivery systems;
- Requires removal of all solvent and solvent wastes from closed facilities;
- Inspections to maintain compliance with pollution prevention requirements;
- Discourages Federal and Local governments from addressing drycleaning sites through alternative cleanup programs;
- Established the Dry Cleaning Facility Release Trust Fund;

Dry Cleaning Facility Release Trust Fund

- Funded by-
- 2.5 % Gross Receipts Surcharge;
 - \$5.50 per gallon Fee on the purchase of chlorinated solvent
 - Perchloroethylene (Perc, PCE), Chlorofluorocarbon, etc.;
 - \$0.55 per gallon Fee on the purchase of non-chlorinated solvent
 - Petroleum, Green Earth™, CO₂, etc.;
 - \$100 annual registration fee per facility;
 - \$5,000 Deductible to join Trust Fund



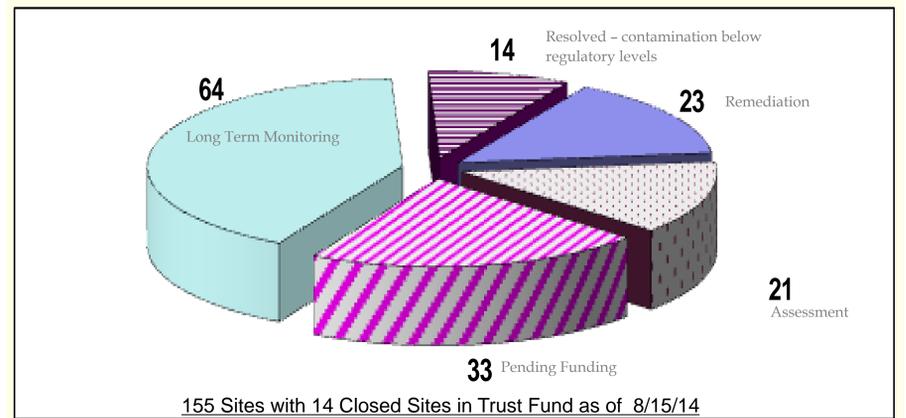
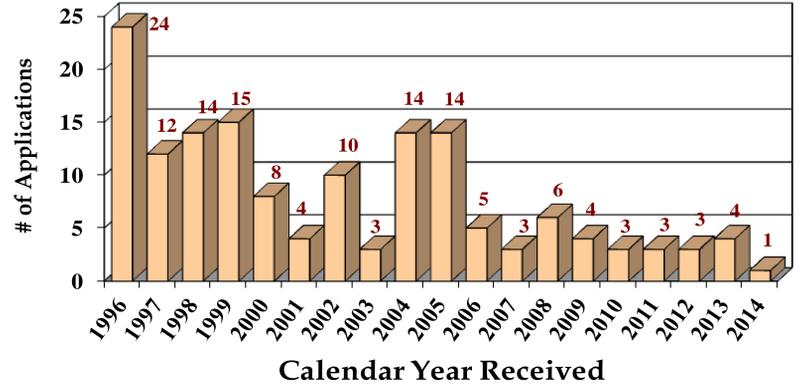
Dry Cleaning Trust Fund Receipts



Application & Ranking

- Interested parties submit a completed application to the department; which includes a groundwater sample demonstrating a release has occurred, (or soil if pre-approved),
- Completed applications are reviewed and a Priority Ranking completed to determine eligibility for Fund Expenditure.
- Upon initiation of Corrective Action, a \$5,000 deductible is due from the applicant.
- DFRTF will complete Corrective Actions up to \$5,000,000 per site

DFRTF Applications (As of August 15, 2014)

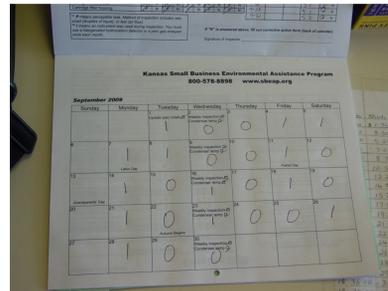


Compliance Inspections

Verification of facility compliance with the Drycleaner Environmental Response Act

- Self Inspection Log (provided as a calendar by K-State Small Business Environmental Assistance Program)
- Integrity of Secondary Containment dike/system around dry cleaning machine
- Storage of solvent containing wastes in sealed drums on secondary containment
- Treatment of separator water

#1 Violation- Incomplete calendars



Separator water without secondary containment



Non-approved secondary containment (made of brick, a pervious material)



Solvent wastes stored without secondary containment, bands



Site Assessment

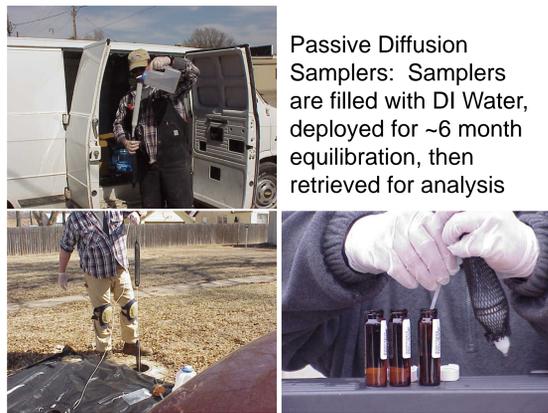
- Source Investigation
 - Delineation of vadose zone contamination at source area
 - Passive soil gas screening
 - Direct push soil sampling
 - Manual soil sampling
- Expanded Site Assessment
 - Complete vertical and horizontal delineation of contamination
 - Direct push groundwater sampling
 - Monitoring well installation



Passive soil-gas samplers



Indoor Air Sampling



Passive Diffusion Samplers: Samplers are filled with DI Water, deployed for ~6 month equilibration, then retrieved for analysis



Vacuum Excavation used for drilling or excavating in locations with underground utilities or limited access



Direct Push Sampling Used to collect soil and/or groundwater samples



Limited Access Drill Rig used for drilling inside buildings or locations with overhead utilities



Sample collection from deep wells



Concrete Coring used to create neat holes in finished or concrete floors



Hydrasleeve™ no-purge groundwater samplers.



Sewer Camera used to identify location of and potential leaks in private sewer lines

Remediation

- In Situ Chemical Oxidation
- Air Sparge / Soil Vapor Extraction
- Granular Activated Carbon & Treated Water Re-injection
- Source Area Excavation
- Diffuse Bubble Tray Stripper
- Large Diameter Boring
- City Water Connections

Small Scale (on-site) vs. Large Scale (municipal water supply systems)



Air Sparge / Soil Vapor Extraction



Granular Activated Carbon



Source Removal / Excavation



Hydrogen Peroxide- In Situ Chemical Oxidation



Source Area Excavation inside of former facility



One-Pass Trenching- Interceptor Trench with Tray Stripper



Large Diameter Boring



Permanganate In Situ Chemical Oxidation Injection



PROJECT SPOTLIGHT – Emergency Response

Four Seasons, 8947 W. Central, Wichita, Sedgwick County

Kansas Dry Cleaning Program

Assessment and Restoration Section - Bureau of Environmental Remediation



Site Assessment Project History:

- December 2009 – KDHE Site Assessment (SA) Unit conducted Unified Focused Assessment (Radium Dial Industry) – Radium and VOCs
 - Standard Products/West Kellogg (SP/WK) Site at 7920 W. Kellogg
 - Tetrachloroethylene (PCE) identified in direct push probes – 8.1 µg/L
 - Placed on list of contamination to be further investigated
 - March 2013 – KDHE SA Unit conducted a Site Evaluation (SE)
 - PCE identified in direct push probes upgradient of SP/WK Site – 7.4 µg/L
 - February 2014 – April 2014– KDHE SA Unit initiated a Preliminary Assessment / Site Inspection (PA/SI) at SP/WK Site
 - PCE identified in upgradient private wells – maximum 554.4 µg/L
 - KDHE SA Unit conducted a review of Wichita City Directories and Telephone Directories
 - Potential Sources?
 - Former Four Seasons Dry Cleaners, 8947 W Central
 - Former Best Cleaners, 9334 W Central (ID in May 2014)
- March - April 2014 – KDHE SA Unit conducted Site Inspection (SI)
- Groundwater samples collected from direct push probes upgradient/downgradient of the two former dry cleaners identified during the directory search
 - PCE identified in downgradient push probes at each facility exceeding MCL; upgradient contamination not detected

Dry Cleaning Facility Release Trust Fund Project History:

- March 24, 2014 – Former Four Seasons Dry Cleaners confirmed as a source of PCE groundwater contamination
- Transferred to KDHE Dry Cleaner Remediation Program for investigation under the Dry Cleaning Facility Release Trust Fund (DFRTF)
- DFRTF continued sampling of private domestic and L&G wells
- March 31 through April 4, 2014 – DFRTF assisted by SA Unit and KDHE's Wichita District Office conducts supplemental field investigation to delineate the extent of contamination.
 - 2 Direct Push Rigs – groundwater sampling w/ mobile lab
 - 20 probe locations, 3 depths between 30 – 60' bgs
- Area of Concern (AOC) defined as the plume boundary plus an approximate 1 block buffer. AOC used to determine potentially impacted properties for targeted sampling.
- May 13, 2014 – Former Best Cleaners confirmed as 2nd source of PCE groundwater contamination

Alternative Water Supply

- Bottled water for homes above the EPA Maximum Contaminant Level (MCL) of 5 µg/L, but below Removal Management Level (RML) 104 µg/L for PCE.
- Point of Entry Carbon Filtration (whole house): Any home above the RML concentration.
- Immediate connection to currently available city water mains for any residence above MCL or within AOC.
- Install city water mains and connect all homes in the AOC.
 - City ordinance prohibits use of groundwater for potable supply in areas of known contamination

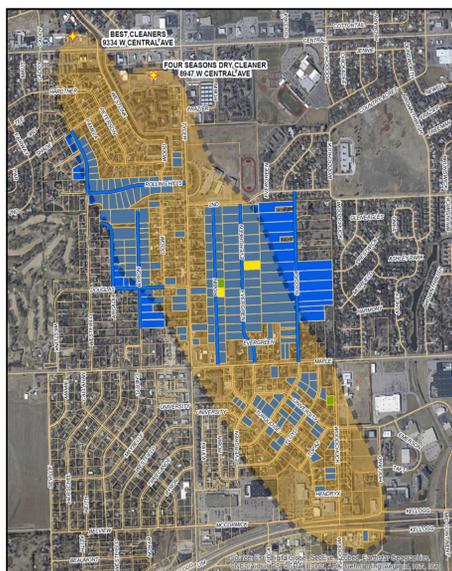
Removal Management Levels

<http://www.epa.gov/region4/superfund/programs/riskassess/rml/rmlgentable.html>

Groundwater Concentration – µg/L

Exposure	Child PCE	Child TCE	Child VC	Adult PCE	Adult TCE	Adult VC
Non-Carcinogen	104	7.7	108	156	9.9	205
Ingestion	282	23.5	141	657	54.8	329
Inhalation	250	12.5	626	250	12.5	626
Dermal	489	147	1,750	1,100	329	4,150
Carcinogen	974	21.8	1.5	974	21.8	1.5

- KDHE cautioned any use above MCL; but RML was used to help determine when showering, washing, lawn and garden, or swimming pool use could be allowed with some risk. Residents instructed if they had any concerns, don't use well water at all.
- EPA MCL: PCE and TCE (5 µg/L), Vinyl Chloride (2 µg/L).



Individual service connections

- 200 properties to be connected to city water mains
 - 197 completed
 - 1 pending
 - 2 in foreclosure
- \$2,370 city fees/ residence
 - Tapping Fee \$850
 - Plant Equity Fee \$1,520
- Ave. \$2,586 plumber/property
- Ave. \$3,379 plumber w/ GSI \$
- Coord./oversight/reporting



City of Wichita – Design/Build Water Line Installation Project

- 2 miles of 8" pipe
- 17 fire hydrants
- 138 new service connections (\$2,370/service)
- 56 new service connections - existing mains
- ~\$1.5 million estimate

Media became aware of "West Wichita Contamination"

- KAKE, Wichita Eagle, KWCH, KSN

Well water unsafe in West Wichita neighborhood

Updated: Mon 6:32 PM, Mar 31, 2014

By: Lily Wu - Email

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More Video...



Residents told to not drink well water in West Wichita



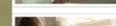
Crews connect water lines to west Wichita homes

Posted: Thu 5:08 PM, Apr 24, 2014 | Modified: Thu 3:52 PM, May 22, 2014
A dozen homes will get connected to the City of Wichita water supply after groundwater contamination was found in West Wichita.



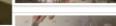
KDHE releases new map of groundwater contamination in West Wichita

Posted: Tue 4:17 PM, Apr 15, 2014 | Modified: Thu 3:52 PM, May 22, 2014
The Kansas Dry Cleaner Remediation Program will pay for the costs associated with connecting residents to the City of Wichita water supply.



KDHE hosting meeting tonight on well water contamination

Posted: Thu 4:34 PM, Apr 10, 2014 | Modified: Thu 3:52 PM, May 22, 2014
A public meeting will be held at Wilbur Middle School, 340 N. Tyler Road, on Thursday, 6 p.m. to 8 p.m.



Groundwater contamination remains a concern for Wichita residents

Posted: Wed 5:23 PM, Apr 30, 2014 | Modified: Thu 3:52 PM, May 22, 2014
The groundwater contamination of a toxic chemical from a former dry cleaner was first reported by KAKE News on March 31st.

Emergency Response Summary

- Samples Collected from 222 residences
- Bottled Water provided to 69 residences (2- 5 gallon bottles per week for avg family)
- Whole-house Carbon Systems installed at 17 residences
 - 2 vessels/service connection – lead/lag configuration
- City Water Connections
 - 2 miles of water line installed
 - 197 connections to city water supply completed
 - 1 awarded to plumbing contractor
 - 2 residences currently in foreclosure; will be connected upon request at sale

Budget

Task	High Est. \$	Low Est. \$	Actual Spent \$	Notes
Bottled Water	24,000	18,000	7,966	69 residences
Carbon Filtration Systems	88,000	79,200	78,965	17 residences
GSI coordination	100,000	100,000	100,000	Consultant coordination
Water Connection – Existing mains - fees	127,980	127,980	111,570	57 vs. 54 properties x \$2,370 plant equity/tap fees, but 9 were prepaid
Water Connection – Existing mains - plumber	216,000	162,000	144,825	56 vs. 54 properties , by parcel
Water Connection – New mains - fees	214,300	214,300	217,360	143 vs 141 properties x \$1,520 plant equity fees
Water Connection – New mains - plumber	564,000	423,000	356,890	138 vs. 141 properties , by parcel
Water Main Installation	1,090,427	790,427	1,115,000	High includes the 3 additional streets on west side of AOC
Site Investigation	100,000	75,000	93,582	As of 10/20/14 (Est. 100,000 remaining long term)
Laboratories costs	15,000	13,000	14,825	GW and VI (doesn't incl. KDHE Lab)
Total =	2,539,707	2,002,907	2,241,163	Est. 1 to 2 million to remediate?