STATE OF KANSAS
PUBLIC WATER SUPPLY
ANNUAL COMPLIANCE REPORT
FOR
CALENDAR YEAR 2010

JULY 2011

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Our Vision – Healthy Kansans living in safe and sustainable environments

DRAFT

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The KDHE public water supply program helps protect the health of Kansas citizens by assuring their drinking water from public water supply systems is safe to drink. The annual compliance report is a summary of public water supply systems' compliance information, and provides a measure of how well the systems are performing.

INTRODUCTION

The Kansas Department of Health and Environment (KDHE), Bureau of Water, Public Water Supply Section is responsible for regulating all public water supply (PWS) systems in the state and assisting them in providing potable water to the people of Kansas. At the close of 2010, there was a total of 896 community, 47 non-transient non-community, and 92 non-community systems for a total of 1,035 PWS systems in Kansas.

This report is a summary of Kansas PWS systems' compliance with drinking water regulations for calendar year 2010. Violations of the maximum contaminant levels (MCL), treatment techniques (TT), and monitoring requirements (M/R) are included in this report. This report has been prepared by KDHE to inform the general public of the quality of drinking water from PWS systems in Kansas and to comply with the federal Safe Drinking Water Act (SDWA).

All SDWA data for Kansas is stored in a database known as the Safe Drinking Water Information System (SDWIS). SDWIS contains an inventory of PWS systems' records, including violations, and sample analytical results. Data for a specific PWS system may be viewed at: http://iaspub.epa.gov/enviro/ef_home2.water

Kansas PWS Annual Compliance Reports for previous years are available at: www.kdheks.gov/pws/

PUBLIC WATER SUPPLY SYSTEMS

In Kansas, a PWS is defined by Kansas Statute (K.S.A.) 65-162a(b) and Kansas Administrative Regulation (K.A.R.) 28-15a-2,a(1)(A) as a "*system for delivery to the public of piped water for human consumption that has at least 10 service connections or regularly serves at least 25 individuals daily at least 60 days out of the year*."

Table 1 shows the different types of PWS systems.

All PWS are required by state law and regulation (K.S.A. 65-4516) and (K.A.R. 28-15-18(a)) to be operated and maintained by personnel that are properly trained and certified. Properly trained operators are a critical component in assuring safe drinking water to the public.

TYPES OF PUBLIC WATER SUPPLY SYSTEMS

Table 1

1. COMMUNITY – *Year-round residential consumers.*
   e.g.: towns, mobile home/trailer parks, rural water districts, subdivisions.
2. TRANSIENT NON-COMMUNITY - *Different non-residential consumers every day.*
   e.g.: motels, parks, airports, campgrounds, truck-stops.
3. NON-TRANSIENT NON-COMMUNITY - *Same non-residential consumers.*
   e.g.:schools, day care facilities, industrial or manufacturing facilities

Table 2 shows the number of PWS systems by water system type, along with their source water type and population served. Some PWS systems use a combination of both groundwater and surface water sources.

TYPES OF PUBLIC WATER SUPPLY SYSTEMS
IN KANSAS

Table 2

TYPE OF WATER SYSTEM	GW	SW	GW/SW	TOTAL	POPULATION
Community Water System	526	308	62	896	2,632,410
Non-Transient Non-Community Water Systems	45	2	0	47	19,641
Transient Non-Community Water Systems	88	4	0	92	4,185
TOTAL	659	314	62	1,035	2,656,236

Chart 1

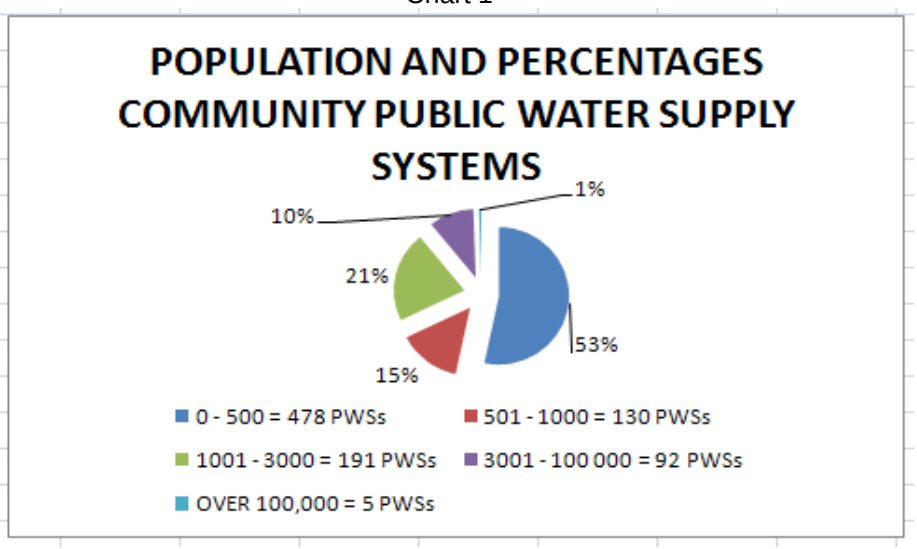


Chart 2

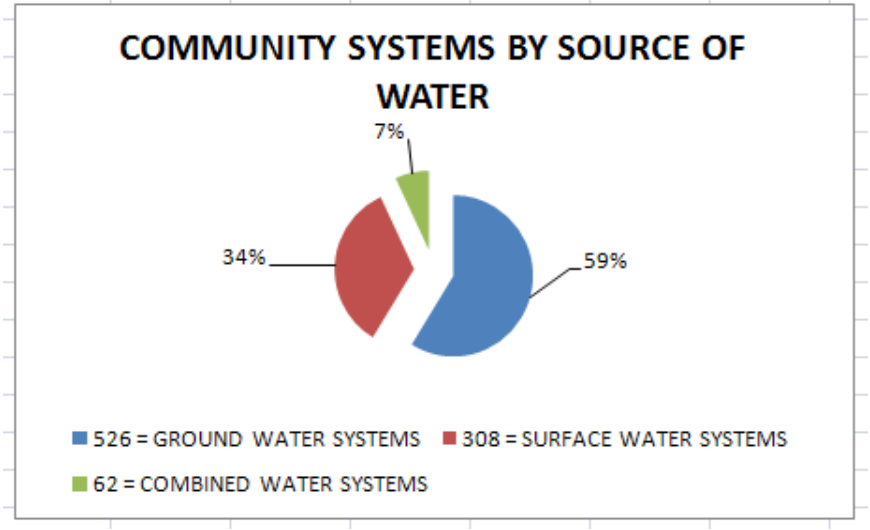
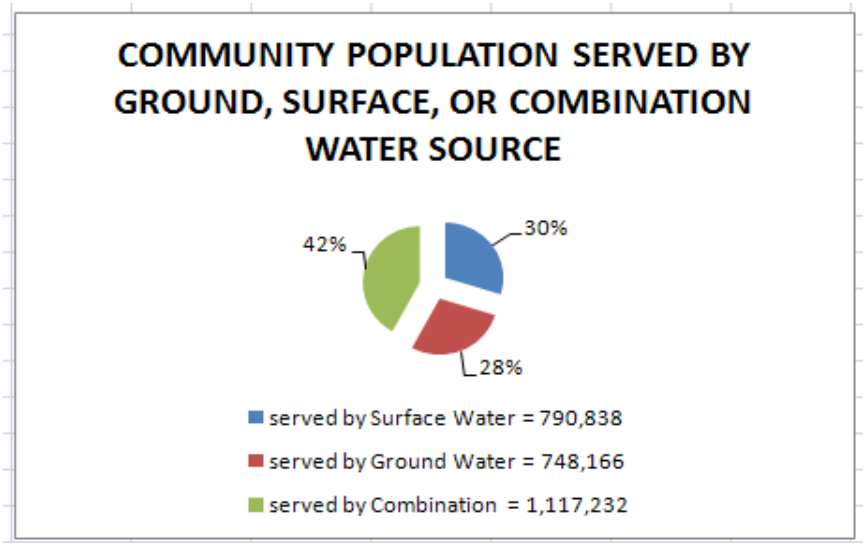


Chart 3



DRINKING WATER QUALITY REGULATIONS

KDHE has adopted several regulations that help insure good drinking water quality across Kansas. The Public Water Supply Section of KDHE administers the federal Safe Drinking Water Act for Kansas and reviews monitoring and sample results of permitted public water supplies in the state. Public drinking water is monitored for a number of regulated constituents, ranging from microbiological organisms to inorganic and organic chemicals and radionuclides.

Kansas regulations establish maximum permissible levels for certain drinking water constituents, known as maximum contaminant levels (MCLs). For some constituents, regulations require application of minimum water treatment techniques (TT). These regulations also require water systems to regularly monitor and report their water quality results to KDHE. These requirements help verify systems are providing safe drinking water through compliance with the MCLs and treatment techniques.

Following is a list of the specific regulations administered by KDHE that address drinking water constituents, treatment processes, treatment techniques, and reporting requirements:

- TOTAL COLIFORM RULE
- NITRATE
- INORGANIC CHEMICALS (IOCs)
- VOLATILE ORGANIC COMPOUNDS (VOCs)
- SYNTHETIC ORGANIC CHEMICALS
- LEAD AND COPPER RULE
- RADIONUCLIDES RULE
- DISINFECTION BY-PRODUCTS RULE
- SURFACE WATER TREATMENT RULE
- GROUND WATER RULE
- CONSUMER CONFIDENCE REPORT
- PUBLIC NOTICE RULE

Table 3 presents compliance levels of the regulations listed above from 2006 through 2010.

REGULATION COMPLIANCE
2006 – 2010

Table 3

REGULATION	2006	2007	2008	2009	2010
Total Coliform Rule- • *Acute/Non-Acute MCL • Monitoring & Reporting	97% 85%	95% 97%	99% 95%	96% 97%	95% 93%
Nitrate	98%	98%	98%	98%	98%
Inorganic Chemicals (IOCs)	95%	99%	99%	97%	99%
Volatile Organic Compounds (VOCs)	100%	99%	100%	99%	100%
Synthetic Organic Compounds (SOCs)	99%	100%	100%	100%	100%
Disinfection Byproducts- • Total Trihalomethanes • Total Haloacetic Acids • Total Organic Carbon	92% 91% 48%	92% 91% 48%	98% 98% 98%	98% 98% 99%	99% 99% 99%
Lead & Copper Rule- • Monitoring • Treatment Technique	93% 100%	90% 99%	99% 99%	97% 100%	98% 100%
Surface Water Treatment Rule- • Monitoring • Treatment Technique	89% 99%	97% 97%	99% 99%	100% 93%	100% 87%
Radionuclides Rule- • Gross Alpha • Combined Radium • Combined Uranium	99% 98% 97%	100% 100% 98%	99% 99% 99%	100% 99% 99%	100% 99% 99%
Ground Water Rule- • Monitoring • Treatment Technique	N/A	N/A	N/A	N/A	99% 99%
Consumer Confidence Report Rule	99%	98%	98%	98%	100%

*A total coliform-positive sample followed by an E. coli-positive repeat sample, or an E. coli and total coliform-positive sample followed by a total or E. coli and total coliform-positive repeat sample, constitutes an acute (Tier 1) maximum contaminant level (MCL) violation. For systems sampling 40 or fewer times a month, this is also a monthly MCL violation.

TOTAL COLIFORM RULE

Coliform bacteria are common in the environment and are generally not harmful to human health, but their presence in drinking water is an indication that other potentially harmful bacteria could also be present. All systems are required by K.A.R. 28-15a-21 to submit monthly water samples for coliform bacteria testing. Systems may choose to have this bacteriological testing performed by KDHE's microbiology laboratory or a state certified private laboratory. If total coliform bacteria are detected, further testing for the presence of fecal coliform or E. coli is required.

Table 4 includes a summary of the results from 35,462 total drinking water samples for 2010 (34,803 valid drinking water samples) analyzed by KDHE Microbiology Laboratory for coliform bacteria .

Table 4

SUMMARY OF BACTERIOLOGICAL MONITORING RESULTS – 2010

QUARTER COLLECTED	TOTAL COLIFORM NEGATIVE	TOTAL COLIFORM POSITIVE	E-COLI POSITIVE SAMPLES	INVALID SAMPLES	QUARTERLY TOTALS
First Quarter Samples:	8,264	28	0	197	8,489
2nd Quarter Samples:	8,515	109	10	125	8,759
3rd Quarter Samples:	8,897	180	7	148	9,232
4th Quarter Samples:	8,701	92	0	189	8,982
Total Samples for 2010?	34,377	409	17	659	35,462

Key: QUARTER = Three month period; four quarterly periods in a year.
NEGATIVE = Samples with no coliform bacteria present.
COLIFORM POSITIVE= Samples with coliform bacteria present. (does not include fecal coliform)
FECAL POSITIVE= Samples with fecal coliform bacteria present (E. coli).
INVALID = Samples not analyzed (too old, excessive chlorine, insufficient sample volume, empty, lost in mail, excess growth).

Types Of Total Coliform Violations

Monitoring Violations:

Water systems that fail to collect one or more of the required samples within a monthly compliance period incur a *routine monitoring violation*. When a water sample tests positive for coliform bacteria, water systems are required to collect three repeat samples (also called check samples). If a water system fails to collect one or more of these repeat (check) samples, the system incurs a *repeat monitoring violation*.

Major Monitoring (routine & repeat):

A water system incurs a major monitoring violation if they fail to collect any samples during the required monitoring period. If a system collects some but not all samples during the required monitoring period, they incur a minor monitoring violation.

Acute MCL Violations:

When coliform bacteria are present in any sample, that same sample must also be analyzed for fecal coliform or E. coli. When fecal coliform (E. coli) are present in any combination in initial and repeat samples, the system incurs an acute coliform violation.

Non-Acute MCL Violations:

When more than one sample per month (or more than 5% of samples for systems collecting over 40 samples per month) contains coliform bacteria, the water system incurs a non-acute (or total coliform) violation .

A summary of TCR monitoring and MCL violations during 2010 is presented in Table 5. Minor monitoring violations are not shown.

SUMMARY OF MONITORING VIOLATIONS AND COLIFORM MCL VIOLATIONS IN 2010

Table 5

TYPE OF VIOLATION	TOTAL VIOLATIONS	SYSTEMS IN VIOLATIONS	% OF SYSTEMS IN VIOLATION	% OF SYSTEMS IN COMPLIANCE
Acute Coliform MCL	3	3	1%	99%
Non-Acute Coliform MCL	63	55	5%	95%
Major Monitoring (Routine & Repeat)	79	90	10%	90%

Systems that incurred major monitoring or MCL violations are listed in Appendix B.

WATER CHEMISTRY RULES

The water chemistry rules establish maximum contaminant levels (MCL) and treatment techniques for various constituents affecting drinking water, such as Inorganic chemicals (e.g., heavy metals), volatile organic chemicals (e.g., solvents) and synthetic organic chemicals (e.g., pesticides).

The rules apply to community water systems and non-transient non-community water systems, except in situations where a water system purchases 100 percent of their treated water.

Water systems required to monitor these chemicals collect samples by following a standardized 9 year monitoring cycle consisting of three, 3 year compliance periods. Water systems' monitoring frequency is based on the size of the population served, and on the type of source water used (surface water, groundwater, or combination sources).

Water systems using surface water are required to monitor more frequently than those using groundwater because surface water is more susceptible to contamination via runoff.

Water systems with populations greater than 3,300 are required to monitor more frequently than small systems with populations less than or equal to 3,300.

With the exception of asbestos, compliance monitoring water samples under this regulation are required to be collected at water system's point of entry (POE). The POE is defined as a point that is after raw water has been treated (disinfected) and before it enters the distribution system.

Inorganic Chemicals (IOC)

Kansas regulations (K.A.R. 28-15a-23) set monitoring requirements for eleven IOC (nine metals and two non-metals). Most IOCs occur naturally in the environment and are soluble in water. Some IOCs originate from natural mineral deposits. Industrial activities such as metal finishing, textile manufacturing, mining operations, electroplating, and manufacturing of fertilizers, paints, and glass can also generate these chemicals.

IOCs can be removed from drinking water using various available technologies such as coagulation/filtration, lime softening, reverse osmosis, ion exchange, and activated alumina.

Water systems using groundwater as their sole source must monitor for IOC at least once during each three year compliance period. Systems that utilize surface water as a source must monitor for IOC chemicals annually.

Water systems with a routine compliance monitoring sample showing results of any of the IOCs at a level greater than the MCL must increase the monitoring frequency of that chemical to at least quarterly. Compliance with the MCL for any IOC is determined by a running annual average. When a water system's running annual average is greater than an IOC MCL, they incur a MCL violation. Water systems having a MCL or monitoring violation are required to

notify their customers of such violations by issuing a public notice. Table 6 lists the inorganic chemicals regulated by KDHE.

REGULATED INORGANIC CHEMISTRY (IOC)

Table 6

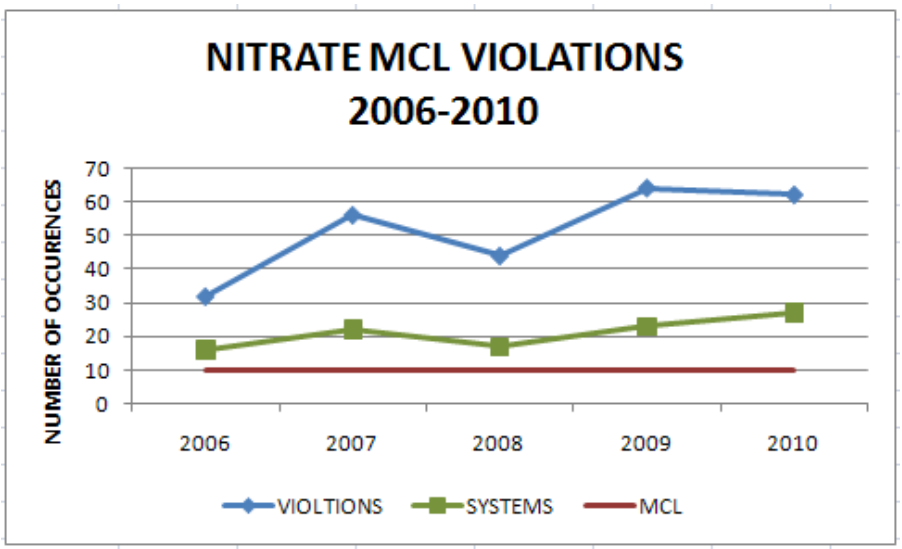
Compound Name	MCL		Typical Source
Antimony	0.006	mg/l	Discharge from petroleum refineries
Arsenic	0.05	mg/l	Erosion of natural deposits
Asbestos	7	MFL	Decay of asbestos cement in water mains
Barium	2	mg/l	Discharge of drilling wastes, erosion
Beryllium	0.004	mg/l	Erosion of natural deposits, discharge from refineries
Cadmium	0.005	mg/l	Erosion of natural deposits, pipe corrosion
Chromium	0.1	mg/l	Erosion of natural deposits, steel mills
Cyanide	0.2	mg/l	Discharge from steel/metal refineries
Fluoride	4	mg/l	Water additive or erosion of natural deposits
Mercury	0.002	mg/l	Erosion of natural deposits, factory discharge
Nitrate	10	mg/l	Erosion of natural deposits, runoff from fertilizer use
Nitrite	1	mg/l	Erosion of natural deposits, runoff from fertilizer use
Selenium	0.05	mg/l	Erosion of natural deposits, discharge from refineries
Thallium	0.002	mg/l	Leaching from ore-processing sites

Inorganic Analytes That Are Common In Kansas Water

Nitrate/Nitrite - Many drinking water constituents, such as nitrate and nitrite are found naturally in the environment. Fertilization of agricultural and urban land and polluted runoff can be a significant source of nitrate contamination of ground water. Nitrate is addressed separately from other inorganic chemicals and all PWS systems are required to monitor for nitrate at least annually. Compliance for nitrate is determined by a single sample, not a running annual average. If a water system's routine compliance monitoring nitrate result is equal to or greater than the MCL of 10 mg/l, the nitrate monitoring frequency is increased to quarterly. Nitrate MCL violations are incurred from a single sample exceeding the 10 mg/l MCL.

Systems that incurred a nitrate monitoring or MCL violation are listed in Appendix B.

Chart 4



Calcium, Magnesium, and Total Hardness - Calcium and magnesium are the principal minerals which contribute to the total hardness of water. Total hardness is defined as the sum of the calcium and magnesium concentrations. The median concentration of calcium in Kansas community public water systems was 66 milligrams per liter (mg/l), and the mathematical average was 77 mg/l. The median concentration of magnesium in Kansas community public water systems was 17 milligrams per liter (mg/l), and the mathematical average was 21 mg/l. These values relate to a median 240 mg/l for total hardness. A total hardness of 400 mg/l is considered excessive for Kansas.

Corrosivity, Alkalinity, and pH - Alkalinity is the measure of water to neutralize acids, while the pH indicates the intensity of the acidic or basic character of the solution. The relationship between pH, calcium, and alkalinity determines whether water is corrosive and whether it will deposit calcium carbonate on pipes and plumbing fixtures. Corrosivity is measured by Langlier's Index (LI), a

mathematically determined number based on chemical parameters which affect the corrosion potential of the water. The more negative the number is the more aggressive the water. KDHE interprets water as being highly aggressive if the Langlier's Index is less than -2.0, moderately aggressive if the LI is between -2.0 and 0, and nonaggressive if the LI is greater than 0.

Sodium – The maximum recommended limit in drinking water is 100 mg/l. High concentrations of sodium in water are a concern particularly for those who have been advised by a physician to limit sodium intake. The median concentration of sodium in Kansas community public water systems was 33 milligrams per liter (mg/l), and the mathematical average was 46 mg/l.

Potassium – The concentration of potassium normally found in drinking water has no physiological or aesthetic effects on drinking water users. The median concentration of potassium found during 2010 was 4 mg/l and the mathematical average was 4.5 mg/l.

Chloride – Some people can detect a salty taste when chloride exceeds 250 mg/l. Therefore, a secondary maximum contaminant level has a recommended limit of 250 mg/l. Chloride has no physiological effects. The median concentration of Chloride found during 2010 was 32 mg/l and the mathematical average was 47 mg/l.

Iron and Manganese – High concentrations of iron and manganese tends to stain plumbing fixtures and laundry. It can also affect the taste of water and can deposit on pipes within the distribution system. The median concentration for iron was .08 mg/l and the mathematical average was .37 mg/l. The median concentration for Manganese was 5.9 ug/l and the mathematical average was 58 ug/l.

Phosphorus – In raw surface water, phosphate may cause water treatment problems associated with aquatic plants and with coagulation. A rough rule of thumb is a total phosphate level over 5 mg/l indicates organic contamination. The median concentration for Phosphorus was .06 mg/l and the mathematical average was .22 mg/l.

Sulfate – Sulfate does have a direct health basis for the recommended maximum limit of 250 mg/l in drinking water. Persons not accustomed to high sulfate in water generally experience an unwanted laxative effect upon first consuming water with levels of sulfate greater than 250 mg/l. The median concentration of Sulfate was 60 mg/l and the mathematical average was 127 mg/l.

Turbidity – Turbidity is also known as "cloudiness" in water. It is measured by how much the suspended material in a sample causes a beam of light to scatter. Turbidity limits for surface water are that 95 percent of finished water turbidity readings be less than or equal to 0.3 NTU each month, and that no finished water turbidity readings exceed 1 NTU. No turbidity limits are established for groundwater. The median concentration for Turbidity in all sources was 0 NTU and the mathematical average was .24 NTU.

Specific Conductance – Specific conductance is a numerical expression of the ability of water to conduct an electric current. This numerical expression is reported as micro-ohm per centimeter or microsiemen per centimeter (uMho/cm). Because the number depends on the concentration of the dissolved minerals, conductance indicates the degree of mineralization in water. A conductance greater than 1500 uMho/cm is considered excessive. The median value for 2010 was 620 uMho/cm and the mathematical average was 718 uMho/cm.

Total Dissolved Solids (TDS) – TDS is a measure of the dissolved material in water. The median value for TDS was 390 mg/l and the mathematical average was 468 mg/l.

Silica – Excessive amounts of silica can cause crusting deposits on well screens, pipes, and water heaters. Concentrations above 50 mg/l may cause the water to appear cloudy. The median concentration for silica was 24 mg/l and the mathematical average was 24 mg/l.

Heavy Metals – Lead is perhaps the most topical heavy metal contaminant. The source of lead is primarily household or building

plumbing, specifically lead leached from solder joints but it also

occurs in source water. The median concentration for lead in Kansas source water is 2 mg/l and the mathematical average was 4 mg/l.

Selenium – Some people who drink water containing selenium in excess of the MCL, over many years could experience hair or fingernail losses, numbness in fingers or toes, or problems with their circulation. The median concentration for selenium was 5 ug/l and the mathematical average was 7 ug/l.

Volatile Organic Chemicals (VOC)

Kansas regulation K.A.R. 28-15a-24 sets MCLs and monitoring requirements for VOC in drinking water. Water systems are required to sample each POE at least once during each three year compliance period. If any of the regulated VOCs are detected during routine compliance monitoring, additional monitoring is required which can include frequencies of annual or quarterly.

Compliance with the MCL for any VOC is determined by a running annual average, If a water system is required to monitor a VOC quarterly, then a MCL violation is incurred if the VOC's running annual average is greater than its MCL,

VOCs are commonly referred to as organic solvents. These chemicals are components of many degreasers, industrial cleaners, spot/stain removers, and paint thinners, and are found in some paints, varnishes and lacquers; many paint removers, many pesticides and herbicides, most dry cleaning chemicals, many printing inks and printing press chemicals, and most petroleum products including many types of fuels. Many VOCs are flammable and are toxic in various concentrations. They can be a health hazard when present in drinking water. During 2010, one PWS system incurred a VOC monitoring violation.

Table 7 lists the VOCs regulated by KDHE.

REGULATED VOLATILE ORGANIC CHEMISTRY (VOC)

Table 7

Compound Name	MCL		Uses
Benzene	0.005	mg/l	fuels, pesticides, paints, pharmaceutical
Carbon tetrachloride	0.005	mg/l	degreasing agents, fumigants
Chlorobenzene	0.1	mg/l	industrial solvents, pesticides
cis-1,2 Dichloroethylene	0.07	mg/l	industrial solvents, chemical manufacturing
Dichloromethane	0.005	mg/l	paint strippers, refrigerants, fumigants
Ethylbenzene	0.7	mg/l	gasoline, insecticides
o-Dichlorobenzene	0.6	mg/l	insecticides, industrial solvents
p-Dichlorobenzene	0.075	mg/l	insecticides, moth balls
Styrene	0.1	mg/l	plastics, synthetic rubber, resins
Tetrachloroethylene	0.005	mg/l	dry cleaning/industrial solvents
trans-1,2 Dichloroethylene	0.1	mg/l	industrial solvents, chemical manufacturing
Trichloroethylene	0.005	mg/l	paint strippers, dry cleaning, degreasers
Vinyl chloride	0.002	mg/l	plastics/synthetic rubber, solvents
Xylenes	10	mg/l	paints/inks, solvents, synthetic fibers, dyes
1,1 Dichloroethylene	0.007	mg/l	paints, dyes, plastics
1,1,1 Trichloroethane	0.2	mg/l	metal cleaning/degreasing agent
1,1,2 Trichloroethane	0.005	mg/l	industrial degreasing solvents
1,2 Dichloroethane	0.005	mg/l	gasoline, insecticides
1,2 Dichloropropane	0.005	mg/l	soil fumigants, industrial solvents
1,2,4 Trichlorobenzene	0.07	mg/l	industrial solvents

Synthetic Organic Chemicals (SOC)

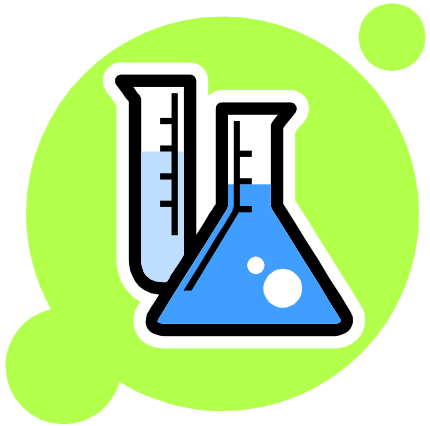
SOCs are man-made chemicals, many of which are chlorinated and used as herbicides, fungicides and insecticides. Kansas regulation, K.A.R. 28-15a-24, sets monitoring requirements for 33 SOCs. MCLs for each SOC are set by Kansas regulation K.A.R. 28-15a-61.

Water systems that utilize groundwater are required to monitor for SOCs at least once during each three year compliance period. Groundwater with no SOCs detected during their initial compliance period are able to satisfy their triennial SOC monitoring requirement with a triazine immunoassay scan (EPA Method 4670). The immunoassay screening method is highly sensitive in detecting all

constituents in the triazine chemical family and is about one fourth the cost of the method for analyzing the full range of regulated SOC (EPA Method 507). Groundwater systems that have detects with the immunoassay method are required to have compliance monitoring samples analyzed for atrazine using EPA Method 507.

Systems utilizing surface water and serving a population less than or equal to 3,300 are required to monitor during each three year compliance period during the months of May and June. Surface water systems serving populations greater than 3,300 are required to monitor annually during the months of May and June.

Table 8 lists the SOCs regulated by KDHE.



REGULATED SYNTHETIC ORGANIC CHEMISTRY (SOC)

Table 8

Compound Name	MCL		Uses
Alachlor (Lasso)	*0.002*	*mg/l*	*herbicide*
Aldicarb	*0.003*	*mg/l*	*insecticide*
Aldicarb sulfoxide	*0.003*	*mg/l*	*insecticide*
Aldicarb sulfone	*0.003*	*mg/l*	*insecticide*
Atrazine (Atranex, Crisazina)	*0.003*	*mg/l*	*herbicide*
Benzo(a)pyrene	*0.0002*	*mg/l*	*coal tar lining & sealants*
Carbofuran (Furadan 4F)	*0.04*	*mg/l*	*rootworm, weevil control*
Chlordane	*0.002*	*mg/l*	*termite control*
Dalapon	*0.2*	*mg/l*	*herbicide*
Dibromochloropropane(DBCP)	*0.0002*	*mg/l*	*pesticide, nematocide,fumigant*
2,4-D	*0.07*	*mg/l*	*herbicide, defoliant*
2,4,5-TP (Silvex)	*0.05*	*mg/l*	*herbicide, defoliant*
Di(diethylhexyl)adipate	*0.4*	*mg/l*	*plasticizer*
Di(diethylhexyl)phthalate	*0.006*	*mg/l*	*plasticizer*
Dinoseb	*0.007*	*mg/l*	*insecticide, herbicide*
Diquat	*0.02*	*mg/l*	*herbicide*
Endothall	*0.1*	*mg/l*	*herbicide, defoliant*
Endrin	*0.002*	*mg/l*	*insecticide*
Ethylene Dibromide (EDB)	*0.0005*	*mg/l*	*gasoline additive, fumigants*
Glyphosate	*0.7*	*mg/l*	*herbicide*
Heptachlor (H-34,Heptox)	*0.0004*	*mg/l*	*termite control*
Heptachlor epoxide	*0.0002*	*mg/l*	*insecticide*
Hexachlorobenzene	*0.001*	*mg/l*	*by-product; solvents &*
Hexachlorocyclopentadiene	*0.05*	*mg/l*	*pesticide, fungicide*
Lindane	*0.0002*	*mg/l*	*pesticide*
Methoxychlor (DMDT, Marlate)	*0.04*	*mg/l*	*insecticide*
Oxamyl (Vydate)	*0.2*	*mg/l*	*insecticide*
Pentachlorophenol (PCP)	*0.001*	*mg/l*	*herbicide, fungicide, wood*
Picloram (Tordon)	*0.5*	*mg/l*	*herbicide, defoliant*
Polychlorinated Biphenyls (PCB)	*0.0005*	*mg/l*	*herbicide*
Simazine	*0.004*	*mg/l*	*herbicide*
2,3,7,8 TCDD (Dioxin)	*$3x10^{-8}$*	*mg/l*	*pesticide byproduct*
Toxaphene	*0.003*	*mg/l*	*pesticide*

KANSAS STATE-WIDE MONITORING WAIVERS AND USE WAIVERS

State-wide Waivers are issued by KDHE for all chemicals that are either not naturally found in Kansas source water or, due to the state wide requirement for all systems to disinfect, are already determined to be using the best available treatment (BAT) for the chemical.

Asbestos

The Kansas Geological Survey has determined that there are no naturally occurring deposits of asbestos in Kansas. It is also known that asbestos fibers do not readily migrate through groundwater. Therefore, most Kansas PWS systems are exempt from monitoring for asbestos. Only systems in Kansas that utilize asbestos-cement pipe in their distribution lines are required to monitor for asbestos. Such water systems are required to test for asbestos at least once every nine years.

Cyanide

The BAT for this chemical is chlorination. Under K.A.R. 28-15-19, all PWS systems in Kansas are required to maintain a chlorine residual of 0.2 mg/l free chlorine or 1.0 mg/l of combined chlorine. All PWS systems in Kansas are waived from cyanide monitoring.

Nitrite

Because chlorine converts nitrite to nitrate, and because K.A.R. 28-15-19 requires all PWS in Kansas to maintain a distribution chlorine residual, all water systems in Kansas are waived from routine nitrite monitoring.

Glyphosate (Roundup®)

The BAT for this chemical is chlorination. Under K.A.R. 28-15-19, all PWS systems in Kansas are required to maintain a chlorine residual of 0.2 mg/l free chlorine or 1.0 mg/l of combined chlorine. All PWS systems in Kansas are waived from glyphosate monitoring.

Use Waivers are issued by KDHE for constituents meeting particular criteria regarding their specific detection levels and/or use within the areas of Kansas water systems. All water systems in Kansas are waived from monitoring the SOCs listed in the following Table because of *Use Waivers*.

KANSAS SOC USE WAIVERS

Table 9

SOC Chemical Names	
Benzo(a)pyrene	*Oxamyl*
Di 2-ethylhexyl adipate	*2,4-D*
Di 2-ethylhelyl phthalate	*2,4,5-TP*
Hexachlorocyclopentadiene	*Pentachlorophenol*
Adicarb	*Dalapon*
Aldicarb Sulfoxide	*Dinoseb*
Aldicarb Sulfone	*Picloram*
Carbofuran	*Dibromochloropropane*
Endothall	*Diquat*
dioxin	

LEAD AND COPPER

Exposure to high levels of metals in drinking water has long been recognized as a cause of adverse health effects. Lead is a particular concern because of its appearance in drinking water and its high toxicity to humans. Copper, although an essential nutrient, can also pose a health threat at elevated levels. Young children are especially susceptible to the toxic effects of these two metals.

Due to the use of lead solder and copper in water system distribution pipes and household plumbing in years past, lead and copper have the possibility of leaching into drinking water. Lead also has the potential of leaching into drinking water from leaded brass plumbing fixtures.

All community water systems and non-transient non-community water systems are required to monitor their distribution systems for lead and copper. If monitoring results indicate unacceptable levels of the metals, the water system is required to take action by initiating corrosion control treatment techniques to minimize lead and copper contamination. Action levels set by this regulation are 0.015 mg/l for lead and 1.3 mg/l for copper.

Systems that incurred lead and copper violations during 2010 are listed in Appendix B.

RADIONUCLIDES

Radioactivity commonly occurs when groundwater comes in contact with the natural decay of uranium in rocks and soils. In most circumstances, this radioactivity occurs at low levels harmless to human health.

Table 10 lists the Radionuclides regulated by KDHE.

REGULATED RADIONUCLIDES

Table 10

Regulated Radionuclide	*MCL*
*Beta/photon emitters**	*4 mrem/yr*
Gross alpha particle	*15 pCi/L*
Combined radium 226/228	*5 pCi/L*
Uranium	*30 ug/l*

In some areas of the state, radioactivity occurs at higher levels which may increase the human health risk.

Kansas regulation, K.A.R. 28-15a-26 requires all community water systems to monitor for radionuclides. Non-community water systems are not required to monitor for radionuclides.

Monitoring for beta particle and photon radioactivity is only required for community PWS systems that are designated as vulnerable. At the time of this document, KDHE has not designated any system vulnerable to beta particle and photon radioactivity contamination.

Radionuclide monitoring is conducted at a water system's POE. If a system's compliance monitoring results have not exceeded the MCL of any radionuclide, systems are allowed to monitor once every 3 years up to a maximum of once every 6 years . If a system's results do show a radionuclide exceeding a MCL, then monitoring for that radionuclide will increase to quarterly. Compliance for the MCLs of radionuclides is determined by running annual averages of quarterly samples.

Systems which incurred a radionuclide violation are listed in Appendix B.

DISINFECTION BY-PRODUCTS (DBP)

The DBP Rule requirements apply to community and non-transient non-community water systems.

The most commonly used method of disinfection in Kansas is chlorination. The chlorine added to water to kill harmful microorganisms can also combine with organic matter naturally present in water to form chemical compounds known as trihalomethanes and haloacetic acids. Monitoring samples for the total level of trihalomethanes (TTHM) and the total level of 5 haloacetic acids (HAA5) are collected from a water system's distribution. Compliance with the MCLs of TTHM and HAA5 is determined by running annual averages of quarterly samples.

While all water systems in Kansas are required by K.A.R. 28-15-19 to maintain chlorine residuals in the distribution system, some water systems use alternative disinfectants at the treatment plant. The most common alternative disinfectants are chlorine dioxide and ozone. These alternative disinfectants can form chlorite and bromate by-products in drinking water. Systems that use these alternative forms of disinfection are required to monitor for the by-products and maintain levels below the MCLs.

When chlorine dioxide is added to drinking water it dissociates to form chlorite. Approximately 50 to 70 percent of chlorine dioxide is converted to chlorite, while the rest is converted to chlorate and chloride. Monitoring for chlorite is conducted at the treatment plant and by a monthly three sample set collected from the water system's distribution. Compliance for the chlorite MCL is based on maintaining levels below the 1.0 mg/l MCL at the treatment plant and from the monthly average of the monthly three sample set from the distribution system.

Ozone use in Kansas is increasing because of its outstanding disinfection capability. When ozone is added to drinking water it reacts with naturally-occurring bromide in the water to create bromate. Bromate is monitored at the entry point to the distribution system. Compliance for the bromate MCL is determined quarterly by the running annual average of the monthly bromate.

As part of the DBP Rule, systems using surface water must follow a treatment technique to remove specific percentages of organic compounds, measured as total organic carbon (TOC). TOC is a measure of disinfection by-product precursors. TOC has no health effects by itself but it provides a measure of the potential for the formation of disinfection by-products such as TTHM and HAA5. Both raw surface water and finished water are monitored monthly for TOC content to determine the effectiveness of a water system's TOC removal treatment. Compliance for TOC is based on a running annual average of monthly removal ratios, calculated quarterly.

Table 11 lists the different constituents regulated by the DBP Rule.

REGULATED DISINFECTION BY- PRODUCTS (DBP) AND DBP PRECURSORS

Table 11

Disinfection By-product Name	*MCL (mg/l)*
Total Trihalomethanes (TTHM)	*0.080*
TTHM components include:	*N/A*
Chloroform	*N/A*
Bromodichloromethane	*N/A*
Bromoform	*N/A*
Dibromochloromethane	*N/A*
5 Haloacetic Acids (HAA5)	*0.060*
HAA5 components include:	*N/A*
Monochloracetic Acid	*N/A*
Dichloracetic Acid	*N/A*
Trichloracetic Acid	*N/A*
Monobromoacetic Acid	*N/A*
Dibromoacetic Acid	*N/A*
Chlorite	*1.0*
Bromate	*0.010*
Total Organic Carbon(TOC)	*Treatment Technique*

Systems which incurred violations of the DBP Rule during 2010 are listed in Appendix B.

SURFACE WATER TREATMENT

Close to one third of all Kansas water systems use surface water for part or all of their drinking water. These water systems provide drinking water to about two thirds of the state's population. Since surface water is more vulnerable to contamination from runoff than groundwater it requires more treatment to assure its safety as a drinking water source.

Kansas regulation K.A.R. 28-15a-70 addresses general treatment requirements for surface water for all community and non-transient non-community water systems. This regulation requires surface water systems to "provide filtration and disinfection treatment of source water." This regulation is known as the Surface Water Treatment Rule (SWTR).

The SWTR requires water systems to filter raw water surface water, and keep a record of turbidity readings of the treated water entering the distribution system. High turbidity levels adversely affect the efficiency of the disinfection process.

The maximum allowable turbidity in finished water is 1.0 nephelometric turbidity unit (NTU). Additionally, at least 95% of the filtered water samples during each month must have turbidity levels equal to or less than 0.3 NTU.

Micro-organisms such as cryptosporidium, Giardia Lamblia and viruses are also commonly found in surface water.

Cryptosporidium is a protozoan which causes cryptosporidiosis in humans. Cryptosporidiosis can cause acute diarrhea, abdominal pain, vomiting, and fever lasting 1-2 weeks in healthy adults, but may be chronic or fatal in immune-compromised people.

Giardia Lamblia is a protozoan. Ingestion of Giardia Lamblia via contaminated drinking water, exposure from person-to-person contact, and other exposure routes can cause giardiasis. The symptoms of this gastrointestinal disease may persist for weeks or months and include diarrhea, fatigue, and cramps.

Viruses in drinking water can cause stomach cramps and/or gastroenteritis (intestinal distress).

The SWTR requires that the filtering process in conjunction with disinfection remove or inactivate 99.99 percent of viruses, 99.9 percent of Giardia Lamblia cysts, and 99 percent of cryptosporidium cysts.

Kansas regulation K.A.R. 28-15-19 requires all water systems to maintain a chlorine (disinfectant) residual of 0.2 mg/l free chlorine or 1.0 mg/l of combined chlorine. Chlorine residual readings must be taken daily at set intervals and recorded by the water operator. Turbidity and disinfection records are required to be submitted to KDHE on a monthly basis for compliance determination.

Systems which incurred violations of the SWTR during 2010 are listed in Appendix B.

GROUND WATER

EPA issued the Ground Water Rule (GWR) to improve drinking water quality and provide additional protection from disease-causing microorganisms that might be present in groundwater. Water systems that have groundwater sources can be susceptible to fecal contamination. In most cases, fecal contamination contains disease causing pathogens. The GWR provides increased protection against such microbial pathogens.

As the name implies the GWR applies to public water systems that use groundwater as a water source. The targeted, risk-based strategy addresses risks through an approach that relies on four

major components:

- Periodic sanitary surveys of systems that require the evaluation of eight critical elements of a public water system and the identification of significant deficiencies (e.g., a well located near a leaking septic system);

- Triggered source water monitoring when a system that does not already treat drinking water to remove 99.99 percent (4-log) of viruses, identifies a positive sample during Total Coliform Rule monitoring and assessment monitoring targeted at high-risk systems;

- Required corrective action for any system with a significant deficiency or fecal contamination identified in the raw groundwater ; or

- Compliance monitoring to ensure that treatment technology installed to treat drinking water reliably achieves 99.99 percent (4-log) inactivation or removal of viruses.

During 2010, Kansas had 70 groundwater systems which complied with the GWR through 4-log treatment of viruses. No water systems in Kansas identified source groundwater to be contaminated with fecal bacteria. One system incurred a treatment technique violation and two systems incurred monitoring violations for failure to collect triggered source water samples.

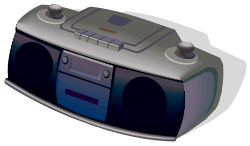
Systems which incurred violations of the GWR during 2010 are listed in Appendix B.

ADDITIONAL PUBLIC WATER SUPPLY REQUIREMENTS

CONSUMER CONFIDENCE REPORT (CCR) RULE

The CCR Rule requires all community water systems to provide customers with an annual water quality report known as a Consumer Confidence Report. Required health risk language must be included in the reports when regulated constituents are detected. CCRs provide information to help educate and inform customers about their water system. Systems with a population over 100,000 must post their CCR on the Internet.

By July 1, 2010, 889 PWS systems were to deliver their CCRs covering calendar year 2009 to their customers, and send a copy of the report with a certificate of delivery to KDHE. The number of systems that incurred a violation for not delivering a copy of their CCR to their customers by July 1, 2010 was 32. Following notification of the violation those 32 systems followed up by submitting to KDHE proof of their CCR distribution to customers. By the end of 2010, 100 percent of PWS systems were in compliance with the CCR Rule.



PUBLIC NOTIFICATION RULE

Public notification is intended to inform consumers when there is a violation or health risk with their drinking water. Thirty-three water systems incurred at least one public notification violation during 2010.

BOIL WATER ADVISORIES

Boil water advisories are issued to inform the public when a risk from exposure to harmful microorganisms might be present in drinking water from a system. The most common reason for issuance of boil water advisories is due to loss of pressure in the distribution system. The public water system and KDHE notify area media when a boil water advisory has been issued or rescinded. A total of 35 boil water advisories were issued during 2010. KDHE issued 18 advisories, and 17 advisories were self initiated by water systems. Systems that issued boil water advisories during 2010 are listed in Appendix B.

OPERATOR CERTIFICATION

Through KDHE, the State of Kansas requires all public water supply systems to have a certified operator in direct responsible charge of the water treatment and water distribution system. Water systems are classified according to complexity, with Class IV being the most complex. Table 12 lists the different classes of Kansas certified operators.

DESCRIPTION OF KANSAS CERTIFIED OPERATOR CLASSES

Table 12

Class	*Length of Experience*	*Description*	*Population Served*
Small System	*6 Months*	*1.Distribution System Only* *2.Chlorination of Groundwater Only*	*All* *< 501*
I	*1 Year*	*1.Chlorination of Groundwater Only* *2.Treatment of Groundwater*	*501-1,500* *<501*
II	*1 Year*	*1.Chlorinatio of Groundwater Only* *2.Treatment of Groundwater** *3.Treatment of Surface Water*	*1,501-5,000* *501-2,500* *<2,501*
III	*2 Years*	*1.Chlorination of Groundwater Only* *2.Treatment of Groundwater or Surface Water**	*5,001-20,000* *2,501-10,000*
IV	*2 Years*	*1.Chlorination of Groundwater Only* *2.Treatment of Groundwater or Surface Water**	*>20,000* *>10,000*

* Includes iron and manganese removal; softening: membrane filtration: coagulation, sedimentation, and filtration, recarbonation; and chemical addition (other than chlorine)

NUMBER OF KANSAS CERTIFIED OPERATORS

Table 13

Classification	*Number of PWS By Classifications*	*Number of Certified Operators*
Small Systems	*696*	*488*
Class I	*140*	*416*
Class II	*128*	*484*
Class III	*46*	*157*
Class IV	*25*	*474*
TOTALS	*1,035*	*2,019*

KDHE has contracted with the Kansas Rural Water Association (KRWA) to provide emergency technical assistance to public water supply systems that lose their sole certified operator.

GOVERNMENT PERFORMANCE RESULTS ACT (GPRA)

The Federal Government Performance Results Act (GPRA) establishes a goal for 95% of the population served by community PWS systems to not need to report any health-based violations. The following table is based on information provided by the U.S. EPA for the federal fiscal years (October 1 through September 30) of 2006-2010.

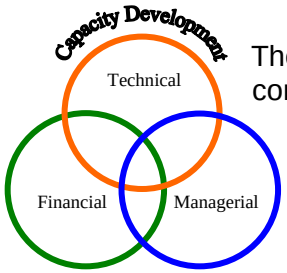
GOVERNMENT PERFORMANCE RESULTS ACT (GPRA) NUMBERS
(2006- 2010)

Table 14

FY	*Community Systems*	*Community Systems w/Violations*	*% of Systems w/o Violations*	*Populations w/ Violations*	*Total Population Served*	*% Population w/o Violations*
2006	*901*	*119*	*87*	*281,505*	*2,568,330*	*92*
2007	*895*	*122*	*87*	*281,850*	*2,576,341*	*96*
2008	*895*	*89*	*90*	*238,999*	*2,714,519*	*91*
2009	*895*	*113*	*87*	*169,597*	*2,597,916*	*93*
2010	*896*	*119*	*89*	*603,258*	*2,664,935*	*96*

KANSAS PUBLIC WATER SUPPLY ASSISTANCE PROGRAMS

CAPACITY DEVELOPMENT PROGRAM



The Kansas Capacity Development Program consists of two components. The first component insures that new public water supplies have the technical, financial and managerial capability to meet Safe Drinking Water Act requirements before being issued a permit to serve customers. The permit application for new systems can be found on the KDHE webpage:

http://www.kdheks.gov/pws/peu.html#permit

The second component is designed to help existing pubic water supply systems achieve and maintain technical, financial and managerial capability by providing training, technical assistance, and financial planning assistance. Several programs and tools are available at no cost to Kansas public water supply systems. A new program added in the fall of 2010 is an Asset Management planning and training tool. Descriptions of these programs and tools are available on the KDHE Capacity Development webpage. KDHE provides an annual report to EPA summarizing the details of the Capacity Development Program implementation efforts. This report can be found on the Capacity Development webpage:

http://www.kdheks.gov/pws/capdev.html

KANSAS PUBLIC WATER SUPPLY LOAN FUND (KPWSLF)

The KPWSLF is a revolving loan fund (SRF) program which provides loans to Kansas municipalities at below market interest rates for construction of public water supply system infrastructure

This is the twelfth year of operation for the KPWSLF. The KPWSLF provides the opportunity for communities which might not have the financial means otherwise to improve or construct safe water supply infrastructure to protect the health of their citizens.

Loans can be received by two distinct types of municipalities; cities and rural water districts (RWD). RWD lack the general taxing powers of cities, and are perceived in credit markets as a greater financial risk. The KPWSLF provides equal access and interest rates to both types of borrowers, but requires different pledges of security to receive a loan.

EPA presents a semi-annual award for Drinking Water State Revolving Loan Fund for Sustainable Public Health Protection. The State of Kansas won the award in EPA Region 7 in 2005 and in 2007.

KDHE publishes an annual report summarizing operation of the Loan Fund at:

http://www.kdheks.gov/pws/loan/2009_KPWSLF_Annual_Report.pdf

COMPLIANCE ASSISTANCE & ENFORCEMENT

One of KDHE's objectives is to assist water systems in protecting public health and achieving compliance with all state and federal drinking water regulations. KDHE staff is available to assist water systems and will refer the systems to third party technical assistance providers as appropriate.

The agency will first offer technical assistance rather than taking formal enforcement action to return water systems to compliance. Typically, enforcement action is administered according to an escalation policy. If three major violations occur within any twelve month period, a directive is sent to the water system. If violations continue, then either a Consent Order or an Administrative Order (with or without a civil penalty) may be issued. KDHE uses more formal enforcement responses when the need to address more serious violations arises before multiple violations can occur. Consent Agreements are generally arranged as part of the appeals process following an Administrative Order. The Consent Order is a formally documented agreement between KDHE and the PWS that the system will take specific actions within an agreed to time frame to return to compliance.

KDHE does not issue any variances or exemptions from the SDWA requirements. All water systems are expected to comply with all drinking water regulations, address violations in a timely manner, and perform public notice when violations occur.

SUMMARY

Appendix A lists the number of MCL, treatment technique, and monitoring/reporting violations by regulated parameter. This information is entered into the Kansas State Drinking Water Information System (KsSDWIS).

The following is a summary of MCL, Treatment Technique and Monitoring/Reporting violations listed in *Appendix B*:

For the Disinfection By-Product Rule, 14 water systems, serving a total population of 17,505 persons, received a total of 41 MCL violations for Haloacetic Acids (HAA). Four water systems, serving a total population of 12,374 persons, received 12 treatment technique violations under the Total Organic Carbon (TOC) requirements. Fifteen water systems, serving a total population of 32,171 persons, received 43 MCL violations for Total Trihalomethanes (TTHMs). Overall, this translates into a compliance rate of 99 percent for HAA requirements, 99 percent compliance for TOC and 99 percent compliance for TTHMs.

For inorganic chemicals (IOCs), there were seven water systems serving a combined population of 4,869, received 26 arsenic MCL violations. Four fluoride MCL violations for 1 water system serving a total population of 99 persons. Overall, this translates into 99 percent compliance.

For nitrate, twenty seven water systems serving a total population of 51,400 persons received 62 nitrate MCL violations under the Nitrate monitoring requirements. This translating into a compliance rate of 98 percent.

For volatile organic chemicals there was one water system serving a population of 294 persons that incurred a monitoring violation for a compliance rate of 99 percent.

For synthetic organic chemicals there was one water system serving a population of 294 persons that incurred a monitoring violation for a compliance rate of 99 percent.

For the Radionuclide requirements, there were no gross alpha violations incurred during the 2010 calendar year. Six systems serving a total population of 5,060 persons received 17 MCL violations of the combined uranium mass MCL.

Three water systems serving a population of 1,240 persons received 5 MCL violations for combined radium. The overall compliance rate results are 100 percent for gross alpha, 99 percent for combined uranium mass, and 99 percent for combined radium.

For the Total Coliform Rule, 55 water systems received 63 coliform MCL violations. Three of these water systems received acute MCL violations. Twenty-two water systems, received 19 major monitoring violations serving a population of 6,000 persons. These results translate to a general MCL compliance rate of 95 percent and a monitoring/repeat sample compliance rate of 93 percent.

During 2010, one system serving a population of 268 persons received a monitoring violation. One-hundred percent compliance was achieved for volatile organic chemical (VOC) and synthetic organic chemical (SOCs) MCLs.

Under the Surface Water Treatment Rule (SWTR), 11 water systems serving a population of 379,334 persons received a treatment technique violation during 2010. This resulted in 87 percent treatment technique compliance.

For the Ground Water Rule (GWR), 2 water systems serving a population of 941 persons received a monitoring violation. One water system serving a population of 1,193 had a treatment technique violation during 2010 for a 99 percent compliance rate.

Twenty-nine water systems serving a combined population of 46,258 received 31 Lead/Copper monitoring violations for a 98 percent compliance rate. There were no violations assessed for optimal corrosion control treatment/source water treatment recommendation or Lead Public Education.

A total of 890 community water systems were required to deliver a Consumer Confidence Report (CCR) to their customers by July 1, 2010. Thirty-two systems serving a combined population of 17,019 persons received a violation for failing to do so, and fourteen systems serving 9,346 persons received violations for inadequate

CCRs. By the end of 2010, 100 percent of systems had complied with the CCR Rule.

Fifty-seven Public Notice Rule (PN) violations were incurred by 39 water systems serving a combined population of 43,416 persons.

Boil water advisories were issued to 35 public water systems during 2010. KDHE initiated 18 advisories, and 17 were initiated by water systems.

Reviewing all the compliance numbers, the overall compliance rate for all Kansas PWS systems (community, transient non-community, and non-transient non-community) for all drinking water regulations during 2010 was 80 percent. A total of 339 water systems serving a combined total population of 740,795 persons received at least one violation of a drinking water requirement during calendar year 2010. There were 696 water systems serving a combined population of 1,916,233 which had no violations during 2010.

APPENDIX A

VIOLATIONS FOR 2010 BY CONTAMINANT

JULY 2011

Kansas Department of Health and Environment

Our Vision – Healthy Kansans living in safe and sustainable environments.

KANSAS

Summary of PWS Violations 2010 Calendar Year	MCL (mg/l)[i]	MCLs		Treatment Techniques		Significant Monitoring/Reporting	
		Number of Violations	Number of Systems With Violations	Number of Violations	Number of Systems With Violations	Number of Violations	Number of Systems With Violations
Organic Contaminants (VOC / SOC)							
1,1,1-Trichloroethane	0.2	0	0			0	0
1,1-Dichloroethylene	0.007	0	0			0	0
1,1,2-Trichloroethane	0.005	0	0			0	0
1,2,4-Trichlorobenzene	0.07	0	0			0	0
1,2-Dibromo-3-chloropropane (DBCP)	0.0002	0	0			0	0
1,2-Dichloroethane	0.005	0	0			0	0
1,2-Dichloropropane	0.005	0	0			0	0
2,3,7,8-TCDD (Dioxin)	$3x10^{-8}$	0	0			0	0
2,4,5-TP	0.05	0	0			0	0
2,4-D	0.07	0	0			0	0
Acrylamide				0	0		
Alachlor	0.002	0	0			0	0
Atrazine	0.003	0	0			0	0
Benzene	0.005	0	0			0	0
Benzo[a]pyrene	0.0002	0	0			0	0
Carbofuran	0.04	0	0			0	0

KANSAS

Summary of PWS Violations 2010 Calendar Year	MCL (mg/l)[i]	MCLs		Treatment Techniques		Significant Monitoring/Reporting	
		Number of Violations	Number of Systems With Violations	Number of Violations	Number of Systems With Violations	Number of Violations	Number of Systems With Violations
Carbon Tetrachloride	0.005	0	0			0	0
Chlordane	0.002	0	0			0	0
cis-1,2-Dichloroethylene	0.07	0	0			0	0
Dalapon	0.2	0	0			0	0
Di(2-ethylhexyl)adipate	0.4	0	0			0	0
Di(2-ethylhexyl)phthalate	0.006	0	0			0	0
Dichloromethane	0.005	0	0			0	0
Dinoseb	0.007	0	0			0	0
Diquat	0.02	0	0			0	0
Endothall	0.1	0	0			0	0
Endrin	0.002	0	0			0	0
Epichlorohydrin				0	0		
Ethylbenzene	0.7	0	0			0	0
Ethylene Dibromide	0.00005	0	0			0	0
Glyphosate	0.7	0	0			0	0
Heptachlor	0.0004	0	0			0	0
Heptachlor epoxide	0.0002	0	0			0	0
Hexachlorobenzene	0.001	0	0			0	0

KANSAS

Summary of PWS Violations 2010 Calendar Year	MCL (mg/l)[i]	MCLs		Treatment Techniques		Significant Monitoring/Reporting	
		Number of Violations	Number of Systems With Violations	Number of Violations	Number of Systems With Violations	Number of Violations	Number of Systems With Violations
Hexachlorocyclopentadiene	0.05	0	0			0	0
Lindane	0.0002	0	0			0	0
Methoxychlor	0.04	0	0			0	0
Monochlorobenzene	0.1	0	0			0	0
Para-Dichlorobenzene	0.075	0	0			0	0
Total Polychlorinated Biphenyls	0.0005	0	0			0	0
Pentachlorophenol	0.001	0	0			0	0
Tetrachloroethylene	0.005	0	0			0	0
Trichloroethylene	0.005	0	0			0	0
Styrene	0.1	0	0			0	0
Toluene	1	0	0			0	0
trans-1,2-Dichloroethylene	0.1	0	0			0	0
Xylenes (total)	10	0	0			0	0
Toxaphene	0.003	0	0			0	0
Oxamyl (Vydate)	0.2	0	0			0	0
Picloram	0.5	0	0			0	0
Simazine	0.004	0	0			0	0

KANSAS

Summary of PWS Violations 2010 Calendar Year	MCL (mg/l)[i]	MCLs		Treatment Techniques		Significant Monitoring/Reporting	
		Number of Violations	Number of Systems With Violations	Number of Violations	Number of Systems With Violations	Number of Violations	Number of Systems With Violations
Vinyl Chloride	0.002	0	0			0	0
Failure to Collect Sample for VOC analysis						1	1
Subtotal Organics		0	0			1	1
Disinfection By-products							
Failure to Provide Monitoring Plan	N/A	0	0			0	0
Chlorine - MRDL	4	0	0			0	0
Chlorine Dioxide	.8	0	0			0	0
Chlorite/Cl02	1.0	0	0			0	0
HAA5 MCL	0.060	41	14			0	0
Total Organic Carbon (TOC)	N/A	0	0	12	4	0	0
Total Trihalomethanes	0.080	43	15			0	0
Subtotal Disinfection By-products		84	29	12	4	0	0
Inorganic Contaminants (IOC)							
Antimony	0.006	0	0			0	0

KANSAS

Summary of PWS Violations 2010 Calendar Year	MCL (mg/l)[i]	MCLs		Treatment Techniques		Significant Monitoring/Reporting	
		Number of Violations	Number of Systems With Violations	Number of Violations	Number of Systems With Violations	Number of Violations	Number of Systems With Violations
Arsenic	0.05	26	7			0	0
Asbestos	7 million fibers/L	0	0			0	0
Barium	2	0	0			0	0
Beryllium	0.004	0	0			0	0
Cadmium	0.005	0	0			0	0
Chromium	0.1	0	0			0	0
Cyanide	0.2	0	0			0	0
Fluoride	4.0	4	1			0	0
Mercury	0.002	0	0			0	0
Nitrate	10 as Nitrogen	62	27			0	0
Nitrite	1 (as Nitrogen)	0	0			0	0
Selenium	0.05	0	0			0	0
Thallium	0.002	0	0			0	0
Total Nitrate and Nitrite	10 (as Nitrogen)	0	0			0	0
Subtotal Inorganic		92	35			0	0
Radionuclide MCLs							
		0	0				

KANSAS

Summary of PWS Violations 2010 Calendar Year	MCL (mg/l)[i]	MCLs		Treatment Techniques		Significant Monitoring/Reporting	
		Number of Violations	Number of Systems With Violations	Number of Violations	Number of Systems With Violations	Number of Violations	Number of Systems With Violations
Gross Alpha	15 pCi/l					0	0
Combined Uranium Mass	30 ug/l	17	6			0	0
Combined Radium	5 pCi/l	5	3			0	0
Subtotal Radionuclides		22	9			0	0
Subtotal of Water Chemistry		111	44			1	1
Total Coliform Rule							
Acute MCL Violation	Presence	3	3				
Non-acute MCL Violation	Presence	63	55				
Major Routine and Follow-up Monitoring						22	9
Subtotal Total Coliform Rule		66	58			22	9
Sanitary Survey						State initiates Sanitary Survey	State initiates Sanitary Survey
Surface Water Treatment Rule (SWTR)							
Filtered Systems Monitoring, Routine/Repeat						0	0
Filtered Systems Treatment Techniques				33	11		

KANSAS

Summary of PWS Violations 2010 Calendar Year	MCL (mg/l)[i]	MCLs		Treatment Techniques		Significant Monitoring/Reporting	
		Number of Violations	Number of Systems With Violations	Number of Violations	Number of Systems With Violations	Number of Violations	Number of Systems With Violations
Unfiltered Systems Monitoring, Routine/Repeat							
Unfiltered Systems Failure to Filter							
Subtotal Surface Water Treatment Rule				33	11	0	0
Lead and Copper Rule							
Initial Lead and Copper Tap M/R						0	0
Follow-up or Routine Lead and Copper Tap M/R						31	29
Treatment Recommendation Violation				0	0		
Public Education				0	0		
Subtotal Lead and Copper Rule				0	0	31	29

1. Values are in milligrams per liter (mg/l), unless otherwise specified.

SDWIS CODES	Consumer Confidence Rule	Monitoring/ Reporting Number of Violations	Monitoring/ Reporting Number of Systems With	Treatment Techniques Number of violations	Treatment Techniques Number of Systems With Violations	Significant Monitoring/Reporting Number of Violations	Significant Number of Systems W/Vio.
71	Failure to Report					32	32
72	Report					14	14

Definitions for the Summary of Violations Table of Appendix A

The following definitions apply to the Summary of Violations table.

Filtered Systems: **Water systems that have installed filtration treatment [40 CFR 141, Subpart H].**

Inorganic Contaminants: **Non-carbon-based compounds such as metals, nitrates, and asbestos. These contaminants are naturally-occurring in some water, but can get into water through farming, chemical manufacturing, and other human activities. Regulations have established MCLs for 15 inorganic contaminants [40 CFR 141.62].**

Lead and Copper Rule: **This rule established national limits on lead and copper in drinking water [40 CFR 141.80-91]. Lead and copper corrosion pose various health risks when ingested at any level, and can enter drinking water from household pipes and plumbing fixtures. States report violations of the Lead and Copper Rule in the following six categories:**

(1 and 2) ***Follow-up and Routine lead and copper tap M/R:*** **A violation where a system did not meet follow-up or routine lead and copper tap testing requirements, or failed to report the results.**

(3) ***Initial lead and copper tap M/R:*** **A violation where a system did not meet initial lead and copper testing requirements, or failed to report the results of those tests to the State.**

(4) ***Lead service line replacement:*** **A violation for a system's failure to replace lead service lines on the schedule required by the regulation.**

(5) ***Public education:*** **A violation where a system did not provide required public education about reducing or avoiding lead intake from water.**

(6) ***Treatment installation:*** **Violations for a failure to install optimal corrosion control treatment system or source water treatment system which would reduce lead and copper levels in water at the tap. [One number is to be reported for the sum of violations in both categories].**

Maximum Contaminant Level (MCL): **The highest amount of a contaminant that is allows in drinking water. MCLs ensure that drinking water does not pose either a short or long-term health risk. MCLs are defined in milligrams per liter (parts per million) unless otherwise specified.**

Monitoring: **Regulations specifies which water testing methods the water systems must use, and sets schedules for the frequency of testing. A water system that does not follow this schedule or methodology is in violation [40 CFR 141].**
States must report monitoring violations that are significant as determined by the EPA Administrator and in consultation with the States. For purposes of this report, significant monitoring violations are major violations and they occur when no samples are taken or no results are reported during a compliance period. A major monitoring violation for the surface water treatment rule occurs when at least 90% of the required samples are not taken or results are not reported during the compliance period.

Organic Contaminants: **Carbon-based compounds, such as industrial solvents and pesticides. These contaminants generally get into water through runoff from cropland or discharge from factories. Regulations set legal limits on 54 organic contaminants that are to be reported [40 CFR 141.61].**

Radionuclides: **Radioactive particles which can occur naturally in water or result from human activity. Regulations set legal limits on four types of radionuclides: radium-226, radium-228, gross alpha, and beta particle/photon radioactivity [40 CFR 141]. Violations for these contaminants are to be reported using the following three categories:**

(1) ***Gross alpha:*** **A violation for alpha radiation above MCL of 15 picocuries/liter. Gross alpha includes radium-226 but excludes radon and uranium.**

(2) *Combined radium-226 and radium-228:* **A violation for combined radiation from these two isotopes above MCL of 5 pCi/L.**

(3) *Gross beta:* **A violation for beta particle and photon radioactivity from man-made radionuclides above 4 millirem/year.**

Sanitary Survey: **A major monitoring violation if a system fails to collect 5 routine monthly samples if sanitary survey is not performed.**

SDWIS Code: **Specific numeric codes from the Safe Drinking Water Information System (SDWIS) have been assigned to each violation type included in this report. The violations to be reported include exceeding contaminant MCLs, failure to comply with treatment requirements, and failure to meet monitoring and reporting requirements. Four-digit SDWIS Contaminant Codes have also been included in the chart for specific MCL contaminants.**

Surface Water Treatment Rule (SWTR): **The SWTR establishes criteria under which water systems supplied by surface water sources, or ground water sources under the direct influence of surface water, must filter and disinfect their water [40 CFR 141, Subpart H]. Violations of the ASurface Water Treatment Rule@ are to be reported for the following four categories:**

(1) *Filtered systems monitoring, routine/repeat):* **A violation for a system's failure to carry out required tests, or to report the results of those tests.**

(2) *Filtered systems treatment techniques:* **A violation for a system's failure to properly treat its water.**

(3) *Unfiltered systems monitoring, routine/repeat:* **A violation for a system's failure to carry out required water tests, or to report the results of those tests.**

(4) *Unfiltered systems failure to filter:* **A violation for a system's failure to properly treat its water. Data for this violation code will be supplied to the States by EPA.**

Treatment Techniques: **A water disinfection process that is required instead of an MCL for contaminants that laboratories cannot adequately measure. Failure to meet other operational and system requirements under the Surface Water Treatment and the Lead and Copper Rules have also been included in this category of violation for purposes of this report.**

Total Coliform Rule (TCR): **The Total Coliform Rule establishes regulations for microbiological contaminants in drinking water. These contaminants can cause short-term health problems. If no samples are collected during the one month compliance period, a significant monitoring violation occurs. States are to report four categories of violations:**

(1) *Acute MCL violation:* **A violation where the system found fecal coliform or E. coli, potentially harmful bacteria, in its water, thereby violating the rule.**

(2) *Non-acute MCL violation:* **A violation where the system found total coliform in samples of its water at a frequency or at a level that violates the rule. For systems collecting fewer than 40 samples per month, more than one positive sample for total coliform is a violation. For systems collecting 40 or more samples per month, more than 5% of the samples positive for total coliform is a violation.**

(3 and 4) *Major routine and Follow-up monitoring:* **A violation where a system did not perform any monitoring. [One number is to be reported for the sum of violations in these two categories.]**

Unfiltered Systems: **Systems that do not need to filter their water before disinfecting it because the source is very clean [40 CFR, Subpart H].**
Violation: **A failure to meet any state or federal drinking water regulation. Most violations require the water system to perform public notification to its consumers of said violation.**

Appendix B

Monitoring and MCL Violations Tables for 2010

Kansas Department of Health and Environment

Our Vision – Healthy Kansans living in safe and sustainable environments

Total Coliform Rule Violations

KANSAS PWS SYSTEMS WITH TOTAL COLIFORM ROUTINE MAJOR MONITORING VIOLATIONS
2010 CALENDAR YEAR

	EPA #	PWS NAME	LOCATION	COUNTY	POP.	NUMBER OF VIOLATIONS
1	KS2105902	APPANOOSE SCHOOL	POMONA	FRANKLIN	243	2
2	KS2001506	BUTLER CO RWD 4	AUGUSTA	BUTLER	1,940	1
3	KS2115524	CAMP KANZA	WICHITA	RENO	300	1
4	KS2003515	COWLEY CO RWD 8	WINFIELD	COWLEY	50	1
5	KS2010301	EASTON	EASTON	LEAVENWORTH	344	1
6	KS2005530	HILLCREST COURTS	GARDEN CITY	FINNEY	70	1
7	KS2108303	HORSETHIEF RESERV. BENEFIT DIST.	JETMORE	HODGEMAN	25	1
8	KS2005304	KANOPOLIS	KANOPOLIS	ELLSWORTH	504	1
9	KS2116306	LAKEVIEW CHRISTIAN CAMP	STOCKTON	ROOKS	25	2
10	KS2019109	MULVANE MHC	MULVANE	SUMNER	179	2
11	KS2013320	NEOSHO CO RWD 1C	ERIE	NEOSHO	670	1
12	KS2013315	NEOSHO CO RWD 3	ERIE	NEOSHO	128	1
13	KS2117330	THE CAMELOT SCHOOLS	GODDARD	SEDGWICK	50	1
14	KS2015506	WESTERN ACRES MHC	HUTCHINSON	RENO	42	1

TOTAL POPULATION:	4,570
TOTAL VIOLATIONS:	17
TOTAL PWS SYSTEMS:	14

KANSAS PWS SYSTEMS WITH TOTAL COLIFORM REPEAT MAJOR MONITORING VIOLATIONS
2010 CALENDAR YEAR

	EPA #	PWS NAME	LOCATION	COUNTY	POP.	NUMBER OF VIOLATIONS
1	KS2010301	EASTON	EASTON	LEAVENWORTH	344	1
2	KS2006902	INGALLS	INGALLS	GRAY	329	1
3	KS2117106	LAKESIDE UNITED METHODIST CENTER	SCOTT CITY	SCOTT	25	1
4	KS2013911	SCRANTON	SCRANTON	OSAGE	672	1
5	KS2015519	WEST HILLS SUBDIVISION	NICKERSON	RENO	60	1

TOTAL POPULATION:	1,430
TOTAL VIOLATIONS:	5
TOTAL PWS SYSTEMS:	5

KANSAS PWS SYSTEMS WITH TOTAL COLIFORM ACUTE MCL VIOLATIONS
2010 CALENDAR YEAR

	EPA #	PWS NAME	LOCATION	COUNTY	POP.	NUMBER OF VIOLATIONS
1	KS2000907	BARTON CO RWD 2	GREAT BEND	BARTON	344	1
2	KS2000911	GREAT BEND	GREAT BEND	BARTON	15,564	1
3	KS2116910	OUTLAWS	SALINA	SALINE	25	1

TOTAL POPULATION:	15,933
TOTAL VIOLATIONS:	3
TOTAL PWS SYSTEMS:	3

KANSAS PWS SYSTEMS WITH TOTAL COLIFORM MONTHLY MCL VIOLATIONS
2010 CALENDAR YEAR

	EPA #	PWS NAME	LOCATION	COUNTY	POP.	NUMBER OF VIOLATIONS
1	KS20165403	ALEXANDER	ALEXANDER	RUSH	66	1
2	KS2000704	BARBER CO RWD 2	KIOWA	BARBER	500	1
3	KS2020110	BARNES	BARNES	WASHINGTON	136	1
4	KS2000907	BARTON CO RWD 2	GREAT BEND	BARTON	344	1
5	KS2000915	BARTON HILLS ADDITION	GREAT BEND	BARTON	176	1
6	KS2011712	BEATTIE	BEATTIE	MARSHALL	259	1
7	KS2002301	BIRD CITY	BIRD CITY	CHEYENNE	407	1
8	KS2010701	BLUE MOUND	BLUE MOUND	LINN	285	1
9	KS2011501	BURNS	BURNS	MARION	260	1
10	KS2001530	BUTLER CO RWD 6	EL DORADO	BUTLER	2586	1
11	KS2105716	CARGILL MEAT SOLUTIONS	DODGE CITY	FORD	2600	1
12	KS2001907	CHAUTAUQUA	CHAUTAUQUA	CHAUTAUQUA	97	1
13	KS2013706	CLAYTON	CLAYTON	NORTON	60	1
14	KS2007501	COOLIDGE	COOLIDGE	HAMILTON	86	1
15	KS2005121	COUNTRY VIEW MHC	HAYS	ELLIS	125	4
16	KS2008505	DENISON	DENISON	JACKSON	223	1
17	KS2010301	EASTON	EASTON	LEAVENWORTH	344	1
18	KS2006114	FORT RILEY	FORT RILEY	GEARY	52,786	1
19	KS2119303	FREE BREAKFAST INN	OAKLEY	THOMAS	25	1
20	KS2000911	GREAT BEND	GREAT BEND	BARTON	15,564	2
21	KS2004904	GRENOLA	GRENOLA	ELK	215	1
22	KS2007705	HARPER CO RWD 2	ANTHONY	HARPER	174	1
23	KS2002702	HAWKS LANDING	CLAY CENTER	CLAY	51	1
24	KS2009911	KS ARMY AMM. PLT	PARSONS	LABETTE	182	1
25	KS2117508	KDOT SEWARD CO WEIGH STA 64030	TOPEKA	SEWARD	25	1

KANSAS PWS SYSTEMS WITH TOTAL COLIFORM MONTHLY MCL VIOLATIONS continued…
2010 CALENDAR YEAR

	EPA #	PWS NAME	LOCATION	COUNTY	POP.	NUMBER OF VIOLATIONS
26	KS2117106	LAKESIDE UNITED METHODIST CENTER	SCOTT CITY	SCOTT	25	3
27	KS2005901	LANE	LANE	FRANKLIN	249	1
28	KS2001517	LATHAM	LATHAM	BUTLER	163	1
29	KS2004103	MANCHESTER	MANCHESTER	DICKINGSON	100	1
30	KS2011301	MCPHERSON CO RWD 1	ROXBURY	MCPHERSON	176	1
31	KS2013905	MELVERN	MELVERN	OSAGE	405	1
32	KS2005534	MENDOZA MHC	GARDEN CITY	FINNEY	65	1
33	KS2006109	MILFORD	MILFORD	GEARY	455	1
34	KS2002501	MINNEOLA	MINNEOLA	CLARK	629	1
35	KS2006501	MORLAND	MORLAND	GRAHAM	137	1
36	KS2000508	MUSCOTAH	MUSCOTAH	ATCHISON	196	1
37	KS2013311	NEOSHO CO RWD 5	THAYER	NEOSHO	112	1
38	KS2013904	OSAGE CO RWD 5	OVERBROOK	OSAGE	3,186	1
39	KS2116910	OUTLAWS	SALINA	SALINE	25	2
40	KS2009914	PARSONS	PARSONS	LABETTE	10,996	1
41	KS2017346	PENALTY BOX LLC	WICHITA	SEDWICK	65	1
42	KS2019112	PRAIRIE SCHOONER MHC	MULVANE	SUMNER	60	1
43	KS2005904	RICHMOND	RICHMOND	FRANKLIN	497	1
44	KS2001301	ROBINSON	ROBINSON	BROWN	192	1
45	KS2016707	RUSSELL CO RWD 1	RUSSELL	RUSSELL	44	1
46	KS2016706	RUSSELL CO RWD 2	RUSSELL	RUSSELL	30	1
47	KS2005118	SCHOENCHEN	SCHOENCHEN	ELLIS	216	1
48	KS2017714	SILVER LAKE	SILVER LAKE	SHAWNEE	1,391	1
49	KS2012307	SIMPSON	SIMPSON	MITCHELL	101	1
50	KS2005527	SOUTHWIND SUBDIVISION	GARDEN CITY	FINNEY	1,015	1
51	KS2019107	SUMNER CO RWD 2	WELLINGTON	SUMNER	495	1
52	KS2019120	SUMNER CO RWD 7	CALDWELL	SUMNER	18	1

KANSAS PWS SYSTEMS WITH TOTAL COLIFORM MONTHLY MCL VIOLATIONS continued…
2010 CALENDAR YEAR

	EPA #	PWS NAME	LOCATION	COUNTY	POP.	NUMBER OF VIOLATIONS
53	KS2119103	SUPPESVILLE GOLF COURSE & RESTAURANT	MILTON	SUMNER	40	1
54	KS2017506	SUPREME CATTLE FEEDERS MHP	KISMET	SEWARD	25	1
55	KS2020524	WILSON CO RWD 8	NEODESHA	WILSON	32	2

TOTAL POPULATION:	98,716
TOTAL VIOLATIONS:	63
TOTAL PWS SYSTEMS:	55

KANSAS PWS SYSTEMS WITH TOTAL COLIFORM ROUTINE MINOR MONITORING VIOLATIONS
2010 CALENDAR YEAR

	EPA #	PWS NAME	LOCATION	COUNTY	POP.	NUMBER OF VIOLATIONS
1	KS2000108	ALLEN CO RWD 2	IOLA	ALLEN	36	1
2	KS2000504	ATCHISON CO RWD 3	ATCHISON	ATCHISON	110	1
3	KS2003502	ATLANTA	ATLANTA	COWLEY	239	1
4	KS2005101	BAKER & HAMBLIN LLC	HAYS	ELLIS	60	1
5	KS2016712	BUNKER HILL	BUNKER HILL	RUSSELL	92	1
6	KS2001505	BUTLER CO RWD 2	EL DORADO	BUTLER	1,775	1
7	KS2001530	BUTLER CO RWD 6	EL DORADO	BUTLER	2,586	1
8	KS2107908	CAMP HAWK	NEWTON	HARVEY	25	1
9	KS2105716	CARGILL MEAT SOLUTIONS CORP	DODGE CITY	FORD	2,600	1
10	KS2001706	CEDAR POINT	CEDAR POINT	CHASE	50	1
11	KS2003507	COWLEY CO RWD 1	ARKANSAS CITY	COWLEY	1,500	1
12	KS2003508	COWLEY CO RWD 5	BURDEN	COWLEY	2,000	1
13	KS2003703	CRAWFORD CO RWD 1	FRONTENAC	CRAWFORD	430	2
14	KS2016305	DAMAR	DAMAR	ROOKS	142	1

KANSAS PWS SYSTEMS WITH TOTAL COLIFORM ROUTINE MINOR MONITORING VIOLATIONS continued…
2010 CALENDAR YEAR

	EPA #	PWS NAME	LOCATION	COUNTY	POP.	NUMBER OF VIOLATIONS
15	KS2008507	DELIA	DELIA	JACKSON	178	1
16	KS2004305	DONIPHAN CO RWD 1	ROBINSON	DONIPHAN	75	2
17	KS2004512	DOUGLAS CO RWD 6	LECOMPTON	DOUGLAS	360	1
18	KS2010301	EASTON	EASTON	LEAVENWORTH	344	1
19	KS2019114	GEUDA SPRINGS	GEUDA SPRINGS	SUMNER	191	1
20	KS2002904	GLASCO	GLASCO	CLOUD	488	1
21	KS2000705	HAZELTON	HAZELTON	BARBER	129	1
22	KS2004306	HIGHLAND	HIGHLAND	DONIPHAN	945	1
23	KS2005544	HITCH FEEDERS MHP	SATANTA	HASKELL	32	1
24	KS2007101	HORACE	HORACE	GREELEY	118	2
25	KS2108303	HORSETHIEF RESERV. BENEFIT DIST.	JETMORE	HODGEMAN	25	2
26	KS2006902	INGALLS	INGALLS	GRAY	329	1
27	KS2117508	KDOT SEWARD CO WEIGH STA 64030	TOPEKA	SEWARD	25	1
28	KS2115106	KDWP OPERATIONS MAINT SECT	PRATT	PRATT	90	1
29	KS2010312	LANSING COR FACILITY	LANSING	LEAVENWORTH	3,500	1
30	KS2004903	LONGTON	LONGTON	ELK	362	1
31	KS2013905	MELVERN	MELVERN	OSAGE	405	1
32	KS2012505	MONTGOMERY CO RWD 1	INDEPENDENCE	MONTGOMERY	175	1
33	KS2003710	MULBERRY	MULBERRY	CRAWFORD	568	1
34	KS2015707	NARKA	NARKA	REPUBLIC	77	1
35	KS2009505	NORWICH	NORWICH	KINGMAN	490	1
36	KS2014905	ONAGA	ONAGA	POTTAWATOMIE	681	1
37	KS2013903	OVERBROOK	OVERBROOK	OSAGE	916	1
38	KS2010307	PARADISE PARK MHC	TONGANOXIE	LEAVENWORTH	110	1
39	KS2116112	POSSIE'S PLACE	RANDOLPH	RILEY	25	1
40	KS2001303	POWHATTAN	POWHATTAN	BROWN	85	2
41	KS2105533	PRESTO OIL 1613 THE PANTRY INC	GARDEN CITY	FINNEY	25	2

KANSAS PWS SYSTEMS WITH TOTAL COLIFORM ROUTINE MINOR MONITORING VIOLATIONS continued…
2010 CALENDAR YEAR

	EPA #	PWS NAME	LOCATION	COUNTY	POP.	NUMBER OF VIOLATIONS
42	KS2003302	PROTECTION	PROTECTION	COMANCHE	526	1
43	KS2013501	RANSOM	RANSOM	NESS	268	1
44	KS2014502	ROZEL	ROZEL	PAWNEE	156	1
45	KS2016706	RUSSELL CO RWD 2	RUSSELL	RUSSELL	30	1
46	KS2017717	SHAWNEE CO RWD 3C	TOPEKA	SHAWNEE	1,785	1
47	KS2008508	SOLDIER	SOLDIER	JACKSON	121	1
48	KS2019107	SUMNER CO RWD 2	WELLINGTON	SUMNER	495	3
49	KS2019103	SUMNER CO RWD 4	ARKANSAS CITY	SUMNER	1,277	1
50	KS2117330	THE CAMELOT SCHOOLS, INC.	GODDARD	SEDGWICK	50	1
51	KS2016504	TIMKEN	TIMKEN	RUSH	75	1
52	KS2016117	TUTTLE CREEK WATER CO	MANHATTAN	RILEY	81	1
53	KS2015519	WEST HILLS SUBDIV.	NICKERSON	RENO	60	1
54	KS2015506	WESTERN ACRES MHC	HUTCHINSON	RENO	42	1
55	KS2012703	WHITE CITY	WHITE CITY	MORRIS	525	1
56	KS2004309	WHITE CLOUD	WHITE CLOUD	DONIPHAN	222	1
57	KS2105720	WILROADS GARDEN SCHOOL	DODGE CITY	FORD	120	1
58	KS2004117	WOODBINE	WOODBINE	DICKINSON	206	1
59	KS2117351	YMCA CAMP HYDE, INC	VIOLA	SEDGWICK	300	1
60	KS2115533	YODER MEATS	YODER	RENO	45	1

TOTAL POPULATION:	28,777
TOTAL VIOLATIONS:	68
TOTAL PWS SYSTEMS:	60

KANSAS PWS SYSTEMS WITH TOTAL COLIFORM ROUTINE MINOR MONITORING VIOLATIONS
2010 CALENDAR YEAR

	EPA #	PWS NAME	LOCATION	COUNTY	POP.	NUMBER OF VIOLATIONS
1	KS2001505	BUTLER CO RWD 2	EL DORADO	BUTLER	1,775	1
2	KS2019107	SUMNER CO RWD 2	WELLINGTON	SUMNER	495	1

TOTAL POPULATION:	2,270
TOTAL VIOLATIONS:	2
TOTAL PWS SYSTEMS:	2

Violations of Water Chemistry Rules

Inorganic

KANSAS PWS SYSTEMS WITH ARSENIC MCL VIOLATIONS
2010 CALENDAR YEAR

	EPA #	PWS NAME	LOCATION	COUNTY	POP.	NUMBER OF VIOLATIONS
1	KS2019116	ARGONIA	ARGONIA	SUMNER	472	4
2	KS2015301	ATWOOD	ATWOOD	RAWLINS	1069	4
3	KS2014902	BELVUE	BELVUE	POTTAWATOMIE	220	2
4	KS2015513	BUHLER	BUHLER	RENO	1332	4
5	KS2013706	CLAYTON	CLAYTON	NORTON	60	4
6	KS2002503	ENGLEWOOD	ENGLEWOOD	CLARK	95	4
7	KS2003903	OBERLIN	OBERLIN	DECATUR	1621	4

TOTAL POPULATION:	4,869
TOTAL VIOLATIONS:	26
TOTAL PWS SYSTEMS:	7

KANSAS PWS SYSTEMS WITH FLUORIDE MCL VIOLATIONS
2010 CALENDAR YEAR

	EPA #	PWS NAME	LOCATION	COUNTY	POP.	NUMBER OF VIOLATIONS
1	KS2016508	LIEBENTHAL	LIEBENTHAL	RUSH	99	4

TOTAL POPULATION:	99
TOTAL VIOLATIONS:	4
TOTAL PWS SYSTEMS:	1

Nitrate

KANSAS PWS SYSTEMS WITH NITRATE MCL VIOLATIONS
2010 CALENDAR YEAR

	EPA #	PWS NAME	LOCATION	COUNTY	POP.	NUMBER OF VIOLATIONS
1	KS2007707	ANTHONY	ANTHONY	HARPER	2224	1
2	KS2019116	ARGONIA	ARGONIA	SUMNER	472	3
3	KS2006504	BOGUE	BOGUE	GRAHAM	160	2
4	KS2019303	BREWSTER	BREWSTER	THOMAS	248	1
5	KS2001312	BROWN CO RWD 2	POWHATTAN	BROWN	724	1
6	KS2019118	CONWAY SPRINGS	CONWAY SPRINGS	SUMNER	1193	2
7	KS2005710	DODGE CITY	DODGE CITY	FORD	25689	1
8	KS2004305	DONIPHAN CO RWD 1	ROBINSON	DONIPHAN	75	1
9	KS2001308	EVEREST	EVEREST	BROWN	295	4
10	KS2018102	GOODLAND	GOODLAND	SHERMAN	4388	3
11	KS2007708	HARPER CO RWD 4	FREEPORT	HARPER	320	3
12	KS2007702	HARPER	HARPER	HARPER	1416	1
13	KS2009703	HAVILAND	HAVILAND	KIOWA	469	4
14	KS2001305	HIAWATHA	HIAWATHA	BROWN	3169	1
15	KS2014702	KIRWIN	KIRWIN	PHILLIPS	205	2
16	KS2020301	LEOTI	LEOTI	WICHITA	1315	3
17	KS2009505	NORWICH	NORWICH	KINGMAN	490	4
18	KS2020105	PALMER	PALMER	WASHINGTON	95	4
19	KS2001303	POWHATTAN	POWHATTAN	BROWN	85	1
20	KS2015501	PRETTY PRAIRIE	PRETTY PRAIRIE	RENO	602	4
21	KS2001301	ROBINSON	ROBINSON	BROWN	192	4
22	KS2016308	ROOKS CO RWD 3	PLAINVILLE	ROOKS	380	2
23	KS2017101	SCOTT CITY	SCOTT CITY	SCOTT	3488	2
24	KS2005712	SPEARVILLE	SPEARVILLE	FORD	872	1
25	KS2018502	ST JOHN	ST JOHN	STAFFORD	1174	3
26	KS2019101	SUMNER CO RWD 5	CONWAY SPRINGS	SUMNER	1452	2

KANSAS PWS SYSTEMS WITH NITRATE MCL VIOLATIONS continued…
2010 CALENDAR YEAR

	EPA #	PWS NAME	LOCATION	COUNTY	POP.	NUMBER OF VIOLATIONS
27	KS2017313	VIOLA	VIOLA	SEDGWICK	208	2

TOTAL POPULATION:	51,400
TOTAL VIOLATIONS:	62
TOTAL PWS SYSTEMS:	27

Volatile Organic

KANSAS PWS SYSTEMS WITH VOLATILE ORGANIC MONITORING VIOLATIONS
2010 CALENDAR YEAR

	EPA #	PWS NAME	LOCATION	COUNTY	POP.	NUMBER OF VIOLATIONS
1	KS2013501	RANSOM, CITY OF	RANSOM	NESS	294	1

TOTAL POPULATION:	294
TOTAL VIOLATIONS:	1
TOTAL PWS SYSTEMS:	1

Synthetic Organic

KANSAS PWS SYSTEMS WITH ATRAZINE MONITORING VIOLATIONS
2010 CALENDAR YEAR

	EPA #	PWS NAME	LOCATION	COUNTY	POP.	NUMBER OF VIOLATIONS
1	KS2013501	RANSOM, CITY OF	RANSOM	NESS	294	1

TOTAL POPULATION:	294
TOTAL VIOLATIONS:	1
TOTAL PWS SYSTEMS:	1

Lead and Copper Rule Violations

KANSAS PWS SYSTEMS WITH LEAD AND COPPER CORROSION CONTROL FOLLOW-UP MONITORING/REPORTING VIOLATIONS
2010 CALENDAR YEAR

	EPA #	PWS NAME	LOCATION	COUNTY	POP.	NUMBER OF VIOLATIONS
1	KS2111311	ELYRIA CHRISTIAN SCHOOL	MCPHERSON	MCPHERSON	250	1
2	KS2008719	JEFFERSON CO RWD 2	PERRY	JEFFERSON	642	1
3	KS2010306	TONGANOXIE	TONGANOXIE	LEAVENWORTH	4416	1

TOTAL POPULATION:	5,308
TOTAL VIOLATIONS:	3
TOTAL PWS SYSTEMS:	3

KANSAS PWS SYSTEMS WITH LEAD AND COPPER FOLLOW-UP OR ROUTINE MONITORING/REPORTING VIOLATIONS
2010 CALENDAR YEAR

	EPA #	PWS NAME	LOCATION	COUNTY	POP.	NUMBER OF VIOLATIONS
1	KS2000123	ALLEN CO RWD 11	IOLA	ALLEN	54	1
2	KS2000108	ALLEN CO RWD 2	IOLA	ALLEN	36	1
3	KS2020508	ALTOONA	ALTOONA	WILSON	463	1
4	KS2000311	ANDERSON CO RWD 1C	MOUND CITY	ANDERSON	2,100	1
5	KS2001505	BUTLER CO RWD 2	EL DORADO	BULTER	1,775	1
6	KS2002111	CHEROKEE CO RWD 1	CRESTLINE	CHEROKEE	520	1
7	KS2002116	CHEROKEE CO RWD 7	PITTSBURG	CHEROKEE	158	1
8	KS2003703	CRAWFORD CO RWD 1	FRONTENAC	CRAWFORD	430	1
9	KS2016305	DAMAR	DAMAR	ROOKS	142	1
10	KS2005114	ELLIS	ELLIS	ELLIS	1952	1
11	KS2013308	GALESBURG	GALESBURG	NEOSHO	145	1
12	KS2005511	GARDEN CITY	GARDEN CITY	FINNEY	28,557	2
13	KS2017339	GARDEN PLAIN	GARDEN PLAIN	SEDGWICK	854	1
14	KS2000706	HARDTNER	HARDTNER	BARBER	178	1

KANSAS PWS SYSTEMS WITH LEAD AND COPPER FOLLOW-UP OR ROUTINE MONITORING/REPORTING VIOLATIONS continued…
2010 CALENDAR YEAR

	EPA #	PWS NAME	LOCATION	COUNTY	POP.	NUMBER OF VIOLATIONS
15	KS2007706	HARPER CO RWD 1	ANTHONY	HARPER	50	1
16	KS2009703	HAVILAND	HAVILAND	KIOWA	469	2
17	KS2008719	JEFFERSON CO RWD 2	PERRY	JEFFERSON	642	1
18	KS2009906	LABETTE CO RWD 5	OSWEGO	LABETTE	1,315	1
19	KS2009904	LABETTE CO RWD 8	BARTLETT	LABETTE	1,063	1
20	KS2010102	LANE CO RWD 1	HEALY	LANE	300	1
21	KS2011101	LYON CO RWD 1	EMPORIA	LYON	1,595	1
22	KS2002501	MINNEOLA	MINNEOLA	CLARK	629	1
23	KS2012506	MONTGOMERY CO RWD 6	INDEPENDENCE	MONTGOMERY	1,092	1
24	KS2009505	NORWICH	NORWICH	KINGMAN	490	1
25	KS2001906	PERU	PERU	CHAUTAUQUA	158	1
26	KS2020701	TORONTO	TORONTO	WOODSON	262	1
27	KS2105720	WILROADS GARDEN SCHOOL	DODGE CITY	FORD	120	1
28	KS2020510	WILSON CO RWD 10	CHANUTE	WILSON	808	1
29	KS2020504	WILSON CO RWD 4	NEODESHA	WILSON	293	1

TOTAL POPULATION:	46,650
TOTAL VIOLATIONS:	31
TOTAL PWS SYSTEMS:	29

Radionuclide Rule Violations

KANSAS PWS SYSTEMS WITH COMBINED RADIUM MCL VIOLATIONS
2010 CALENDAR YEAR

	EPA #	PWS NAME	LOCATION	COUNTY	POP.	NUMBER OF VIOLATIONS
1	KS2015905	BUSHTON	BUSHTON	RICE	285	1
2	KS2008301	JETMORE	JETMORE	HODGEMAN	826	1
3	KS2005303	LORRAINE	LORRAINE	ELLSWORTH	129	3

TOTAL POPULATION:	1,240
TOTAL VIOLATIONS:	5
TOTAL PWS SYSTEMS:	3

KANSAS PWS SYSTEMS WITH COMBINED URANIUM MASS MCL VIOLATIONS
2010 CALENDAR YEAR

	EPA #	PWS NAME	LOCATION	COUNTY	POP.	NUMBER OF VIOLATIONS
1	KS2010504	BEVERLY	BEVERLY	LINCOLN	184	1
2	KS2009301	LAKIN	LAKIN	KEARNY	2126	1
3	KS2002705	MORGANVILLE	MORGANVILLE	CLAY	194	3
4	KS2003903	OBERLIN	OBERLIN	DECATUR	1621	4
5	KS2016504	TIMKEN	TIMKEN	RUSH	75	4
6	KS2005502	TOWNS RIVERVIEW SUBDIV.	GARDEN CITY	FINNEY	860	4

TOTAL POPULATION:	5,060
TOTAL VIOLATIONS:	17
TOTAL PWS SYSTEMS:	6

Disinfection By-products (DBP) Rule and DBP Precursors Violations

KANSAS PWS SYSTEMS WITH TOTAL HALOACETIC ACIDS (HAA5) MCL VIOLATIONS
2010 CALENDAR YEAR

	EPA #	PWS NAME	LOCATION	COUNTY	POP.	NUMBER OF VIOLATIONS
1	KS2000506	ATCHISON	ATCHISON	ATCHISON	10402	2
2	KS2009905	CHETOPA	CHETOPA	LABETTE	1234	3
3	KS2012520	ELK CITY	ELK CITY	MONTGOMERY	296	4
4	KS2004904	GRENOLA	GRENOLA	ELK	215	4
5	KS2009911	KS ARMY AMM. PLT.	PARSONS	LABETTE	182	1
6	KS2010712	LINN VALLEY LAKES POA	LINN VALLEY	LINN	193	4
7	KS2004903	LONGTON	LONGTON	ELK	362	4
8	KS2007301	MADISON	MADISON	GREENWOOD	729	2
9	KS2004902	MOLINE	MOLINE	ELK	419	4
10	KS2013910	OSAGE CO RWD 3	VASSAR	OSAGE	900	2
11	KS2009908	OSWEGO	OSWEGO	LABETTE	1746	1
12	KS2013919	PWWSD 12	MELVERN	OSAGE	11	2
13	KS2005904	RICHMOND	RICHMOND	FRANKLIN	497	4
14	KS2007308	SEVERY	SEVERY	GREENWOOD	319	4

TOTAL POPULATION:	17,505
TOTAL VIOLATIONS:	41
TOTAL PWS SYSTEMS:	14

KANSAS PWS SYSTEMS WITH TOTAL TRIHALOMETHANES (TTHM) MCL VIOLATIONS
2010 CALENDAR YEAR

	EPA #	PWS NAME	LOCATION	COUNTY	POP.	NUMBER OF VIOLATIONS
1	KS2000506	ATCHISON	ATCHISON	ATCHISON	10402	2
2	KS012520	ELK CITY	ELK CITY	MONTGOMERY	296	2
3	KS2005309	ELLSWORTH CO RWD 1	ELLSWORTH	ELLSWORTH	2626	3
4	KS2004904	GRENOLA	GRENOLA	ELK	215	4
5	KS2004102	HERINGTON	HERINGTON	DICKINSON	2451	3
6	KS2009911	KS ARMY AMM. PLT	PARSONS	LABETTE	182	2
7	KS2004903	LONGTON	LONGTON	ELK	362	4
8	KS2007301	MADISON	MADISON	GREENWOOD	729	2
9	KS2012304	MITCHELL CO RWD 2	GLEN ELDER	MITCHELL	1291	4
10	KS2012309	MITCHELL CO RWD 3	SCOTTSVILLE	MITCHELL	2048	3
11	KS2004902	MOLINE	MOLINE	ELK	419	4
12	KS2013702	NORTON	NORTON	NORTON	2657	1
13	KS2005904	RICHMOND	RICHMOND	FRANKLIN	497	3
14	KS2007308	SEVERY	SEVERY	GREENWOOD	319	4
15	KS2019119	WELLINGTON	WELLINGTON	SUMNER	7677	2

TOTAL POPULATION:	32,171
TOTAL VIOLATIONS:	43
TOTAL PWS SYSTEMS:	15

KANSAS PWS SYSTEMS WITH TOTAL ORGANIC CARBON (TOC) TREATMENT TECHNIQUE VIOLATIONS
2010 CALENDAR YEAR

	EPA #	PWS NAME	LOCATION	COUNTY	POP.	# VIO
1	KS2000506	ATCHISON	ATCHISON	ATCHISON	10402	2
2	KS2004903	LONGTON	LONGTON	ELK	362	5
3	KS2012304	MITCHELL CO RWD 2	GLEN ELDER	MITCHELL	1291	1
4	KS2007308	SEVERY	SEVERY	GREENWOOD	319	4

TOTAL POPULATION:	12,374
TOTAL VIOLATIONS:	12
TOTAL PWS SYSTEMS:	4

KANSAS PWS SYSTEMS WITH TTHM AND HAA5 MONITORING VIOLATIONS
2010 CALENDAR YEAR

	EPA #	PWS NAME	LOCATION	COUNTY	POP.	NUMBER OF VIOLATIONS
1	KS2012520	ELK CITY, CITY OF	ELK CITY	MONTGOMERY	325	1

TOTAL POPULATION:	325
TOTAL VIOLATIONS:	1
TOTAL PWS SYSTEMS:	1

KANSAS PWS SYSTEMS WITH MAXIMUM RESIDUAL DISINFECTANT LEVEL MONITORING VIOLATIONS
2010 CALENDAR YEAR

	EPA #	PWS NAME	LOCATION	COUNTY	POP.	NUMBER OF VIOLATIONS
1	KS2014902	BELVUE, CITY OF	BELVUE	POTTAWATOMIE	205	2

TOTAL POPULATION:	205
TOTAL VIOLATIONS:	2
TOTAL PWS SYSTEMS:	1

Surface Water Treatment Rule Violations

KANSAS PWS SYSTEMS WITH SURFACE WATER TREATMENT RULE TREATMENT TECHNIQUE VIOLATIONS
2010 CALENDAR YEAR

	EPA #	PWS NAME	LOCATION	COUNTY	POP.	NUMBER OF VIOLATIONS
1	KS2152505	FALL RIVER MGMT. CO.	FALL RIVER	ELK	140	1
2	KS2020502	NEODESHA	NEODESHA	WILSON	2,567	7
3	KS2013322	PWWSD 23	FREDONIA	WILSON	1	1
4	KS2005904	RICHMOND	RICHMOND	FRANKLIN	497	2

TOTAL POPULATION:	3,205
TOTAL VIOLATIONS:	11
TOTAL PWS SYSTEMS:	4

KANSAS PWS SYSTEMS WITH SURFACE WATER TREATMENT RULE TREATMENT TECHNIQUE VIOLATIONS
MORE THAN 5% OF A MONTH'S COMBINED FILTER EFFLUENT TURBIDITY READINGS EXCEEDED 0.3 NTU
2010 CALENDAR YEAR

	EPA #	PWS NAME	LOCATION	COUNTY	POP.	NUMBER OF VIOLATIONS
1	KS2152505	FALL RIVER MGMT. CO.	FALL RIVER	ELK	140	8
2	KS2012109	MARAIS DES CYGNES PUA	PAOLA	MIAMI	1	1
3	KS2004902	MOLINE	MOLINE	ELK	419	1
4	KS2020502	NEODESHA	NEODESHA	WILSON	2,567	2
5	KS2005904	RICHMOND	RICHMOND	FRANKLIN	497	1
6	KS2007308	SEVERY	SEVERY	GREENWOOD	319	8
7	KS2017308	WICHITA	WICHITA	SEDGWICK	372,186	1

TOTAL POPULATION:	376,129
TOTAL VIOLATION:	22
TOTAL PWS SYSTEM:	7

Ground Water Treatment Rule Violations

KANSAS PWS SYSTEMS WITH GROUND WATER RULE SOURCE MONITORING VIOLATIONS
2010 CALENDAR YEAR

	EPA #	PWS NAME	LOCATION	COUNTY	POP.	NUMBER OF VIOLATIONS
1	KS2106113	THUNDERBIRD MARINA	JUNCTION CITY	GEARY	25	1
2	KS2013903	OVERBROOK, CITY OF	OVERBROOK	OSAGE	1,058	1

TOTAL POPULATION:	1,083
TOTAL VIOLATIONS:	2
TOTAL PWS SYSTEMS:	2

KANSAS PWS SYSTEMS WITH GROUND WATER RULE TREATMENT TECHNIQUE VIOLATIONS
2010 CALENDAR YEAR

	EPA #	PWS NAME	LOCATION	COUNTY	POP.	NUMBER OF VIOLATIONS
1	KS2019118	CONWAY SPRINGS, CITY OF	CONWAY SPRINGS, CITY OF	SUMNER	1,272	1

TOTAL POPULATION:	1,272
TOTAL VIOLATIONS:	1
TOTAL PWS SYSTEMS:	1

Consumer Confidence Report Rule Violations

KANSAS PWS SYSTEMS WITH MAJOR CONSUMER CONFIDENCE REPORT (CCR) VIOLATIONS
2010 CALENDAR YEAR

	EPA #	PWS NAME	LOCATION	COUNTY	POP.	NUMBER OF VIOLATIONS
1	KS2015705	AGENDA	AGENDA	REPUBLIC	67	1
2	KS2000109	ALLEN CO RWD 10	CHANUTE	ALLEN	125	1
3	KS2020508	ALTOONA	ALTOONA	WILSON	463	1
4	KS2000503	ATCHISON CO RWD 1	ATCHISON	ATCHISON	490	1
5	KS2000504	ATCHISON CO RWD 3	ATCHISON	ATCHISON	110	1
6	KS2013915	BURLINGAME	BURLINGAME	OSAGE	958	1
7	KS2001505	BUTLER CO RWD 2	EL DORADO	BUTLER	1,775	1
8	KS2013302	COAL HOLLOW	THAYER	NEOSHO	55	1
9	KS2000307	COLONY	COLONY	ANDERSON	377	1
10	KS2013107	CORNING	CORNING	NEMAHA	160	1
11	KS2016305	DAMAR	DAMAR	ROOKS	142	1
12	KS2003501	DEXTER	DEXTER	COWLEY	336	1
13	KS2020109	HADDAM	HADDAM	WASHINGTON	151	1
14	KS2016909	HOWISON HEIGHTS WATER DIST.	SALINA	SALINE	200	1
15	KS2012306	HUNTER	HUNTER	MITCHELL	71	1
16	KS2017334	KECHI	KECHI	SEDGWICK	1,796	1
17	KS2011506	LEHIGH	LEHIGH	MARION	189	1
18	KS2002501	MINNEOLA	MINNEOLA	CLARK	629	1
19	KS2012524	MONTGOMERY CO 13	ELK CITY	MONTGOMERY	160	1
20	KS2013305	NEOSHO CO RWD 6	CHANUTE	NEOSHO	314	1
21	KS2013301	NEOSHO CO RWD 9	CHANUTE	NEOSHO	200	1
22	KS2006505	NICODEMUS TOWNSHIP	BOGUE	GRAHAM	32	1
23	KS2010901	OAKLEY	OAKLEY	LOGAN	1,812	1
24	KS2013103	ONEIDA	ONEIDA	NEMAHA	67	1
25	KS2008901	RANDALL	RANDALL	JEWELL	68	1

KANSAS PWS SYSTEMS WITH MAJOR CONSUMER CONFIDENCE REPORT (CCR) VIOLATIONS continued…
2010 CALENDAR YEAR

	EPA #	PWS NAME	LOCATION	COUNTY	POP.	NUMBER OF VIOLATIONS
26	KS2004111	RED BUD LAKE IMPROV. DIST.	ABILENE	DICKINSON	56	1
27	KS2000708	SHARON	SHARON	BARBER	185	1
28	KS2001519	SIMMONS SUBDIV. SANITATION SYS.	ROSE HILL	BUTLER	80	1
29	KS2010306	TONGANOXIE	TONGANOXIE	LEAVENWORTH	4,416	1
30	KS2002104	TREECE	TREECE	CHEROKEE	140	1
31	KS2015506	WESTERN ACRES	HUTCHINSON	RENO	42	1
32	KS2020702	YATES CENTER	YATES CENTER	WOODSON	1,353	1

TOTAL POPULATION:	17,019
TOTAL VIOLATIONS:	32
TOTAL PWS SYSTEMS:	32

KANSAS PWS SYSTEMS WITH MINOR CONSUMER CONFIDENCE REPORT (CCR) MONITORING VIOLATIONS
2010 CALENDAR YEAR

	EPA #	PWS NAME	LOCATION	COUNTY	POP.	NUMBER OF VIOLATIONS
1	KS2003711	ARCADIA	ARCADIA	CRAWFORD	386	1
2	KS2020110	BARNES	BARNES	WASHINGTON	136	1
3	KS2003303	COMMANCHE CO RWD 2	COLDWATER	COMANCHE	101	1
4	KS2006904	COPELAND	COPELAND	GRAY	308	1
5	KS2005306	ELLSWORTH	ELLSWORTH	ELLSWORTH	2,858	1
6	KS2007304	FALL RIVER	FALL RIVER	GREENWOOD	142	1
7	KS2012107	FONTANA	FONTANA	MIAMI	217	1
8	KS2011312	GALVA	GALVA	MCPHERSON	804	1
9	KS2006303	GOVE	GOVE	GOVE	88	1
10	KS2012102	MIAMI CO RWD 1	PAOLA	MIAMI	1,680	1
11	KS2014301	MINNEAPOLIS	MINNEAPOLIS	OTTAWA	1,952	1
12	KS2013913	QUENEMO	QUENEMO	OSAGE	425	1
13	KS2019902	WALLACE	WALLACE	WALLACE	55	1
14	KS2020514	WILSON CO RWD 2	FREDONIA	WILSON	194	1

TOTAL POPULATION:	9,346
TOTAL VIOLATIONS:	14
TOTAL PWS SYSTEMS:	14

APPENDIX C

MAPS OF VIOLATIONS

JULY 2011

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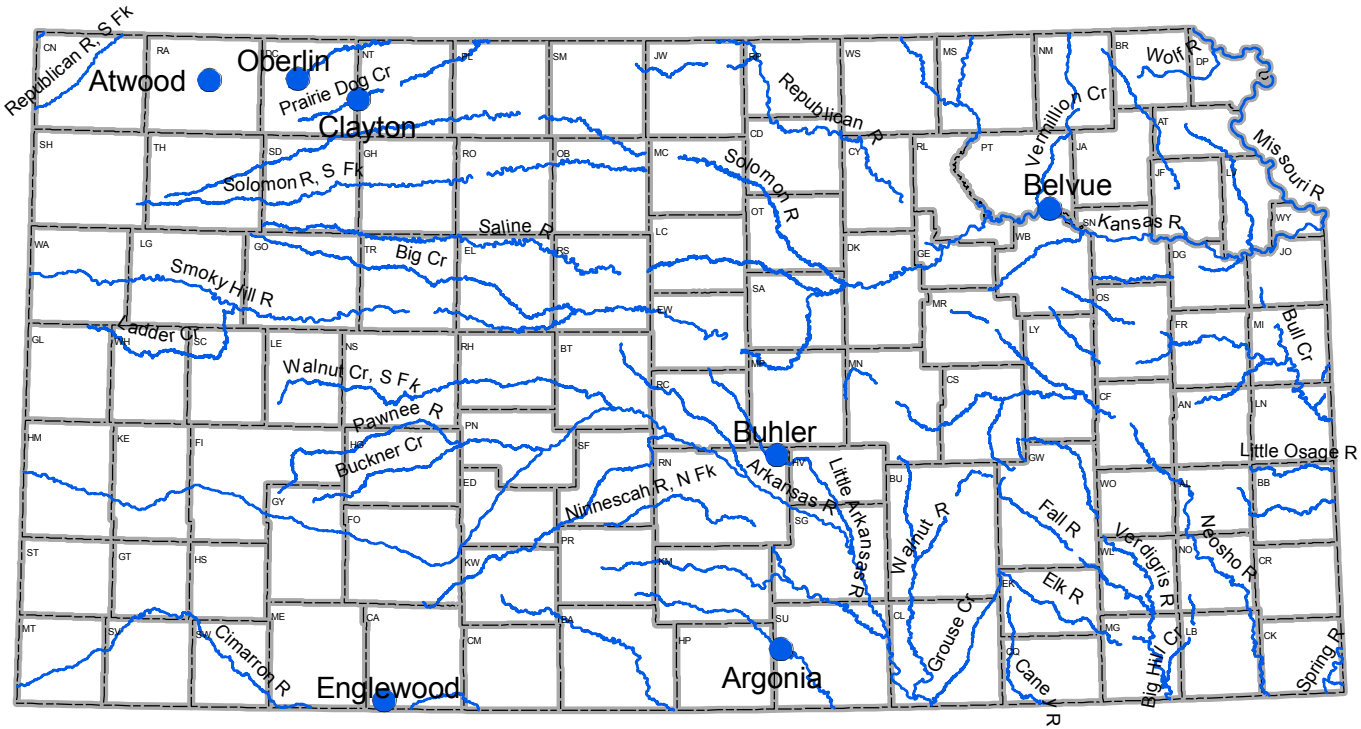
Our Vision – Healthy Kansans living in safe and sustainable environments.

ARSENIC MCL VIOLATIONS 2010



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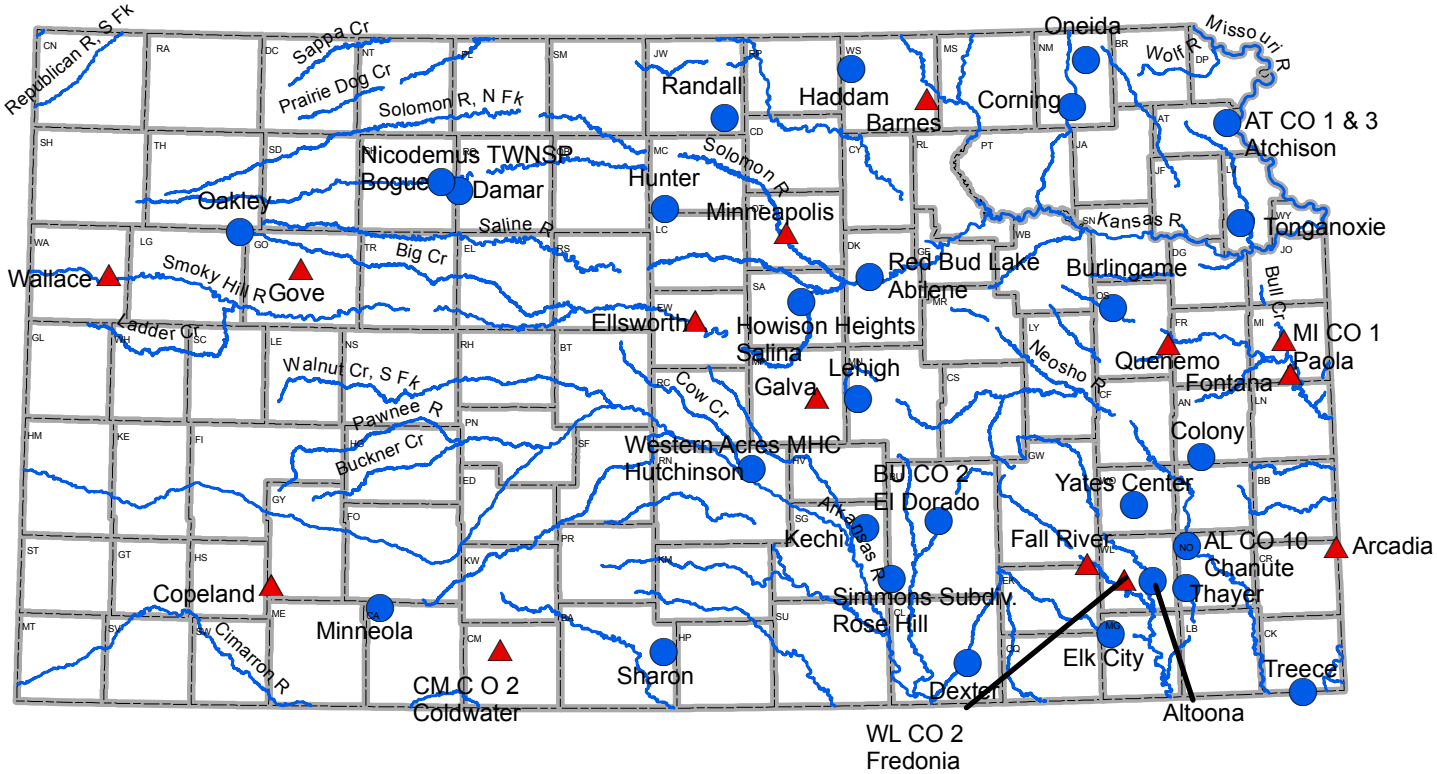
CONSUMER CONFIDENCE REPORT (CCR)
MAJOR AND MINOR VIOLATIONS 2010



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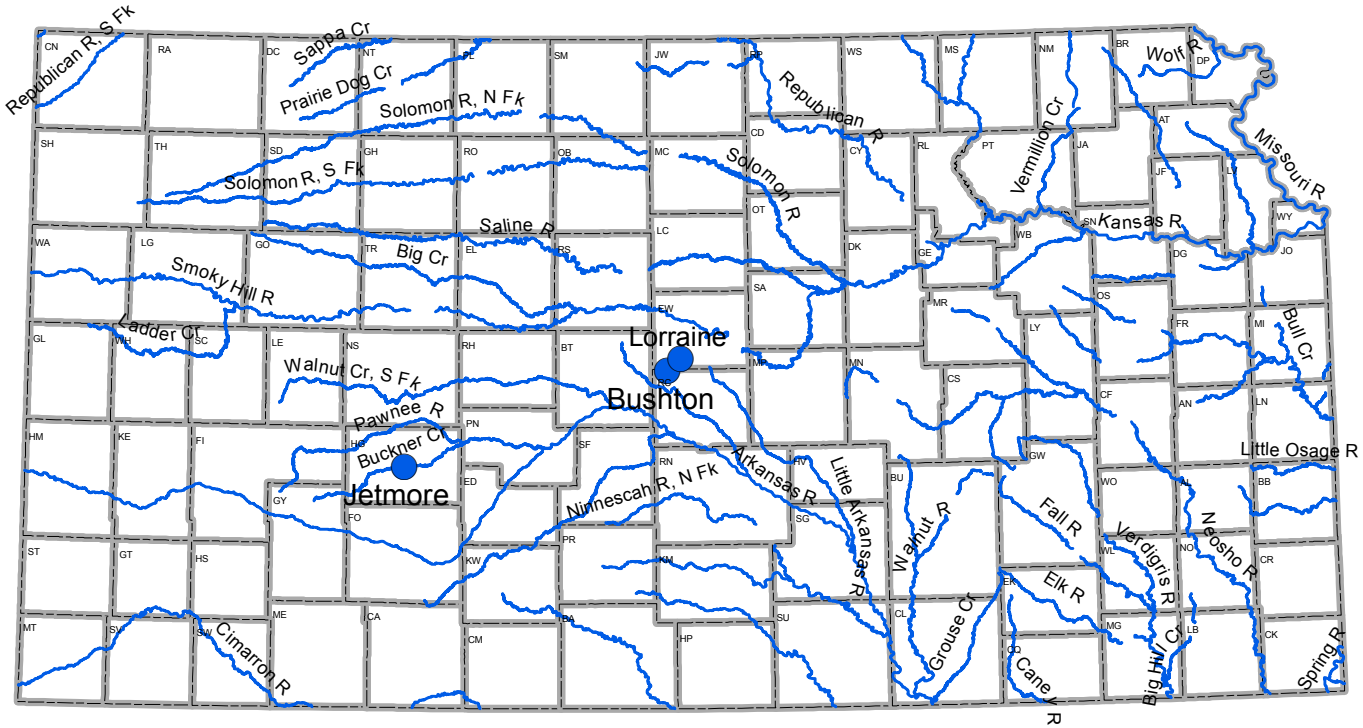
COMBINED RADIUM VIOLATIONS 2010



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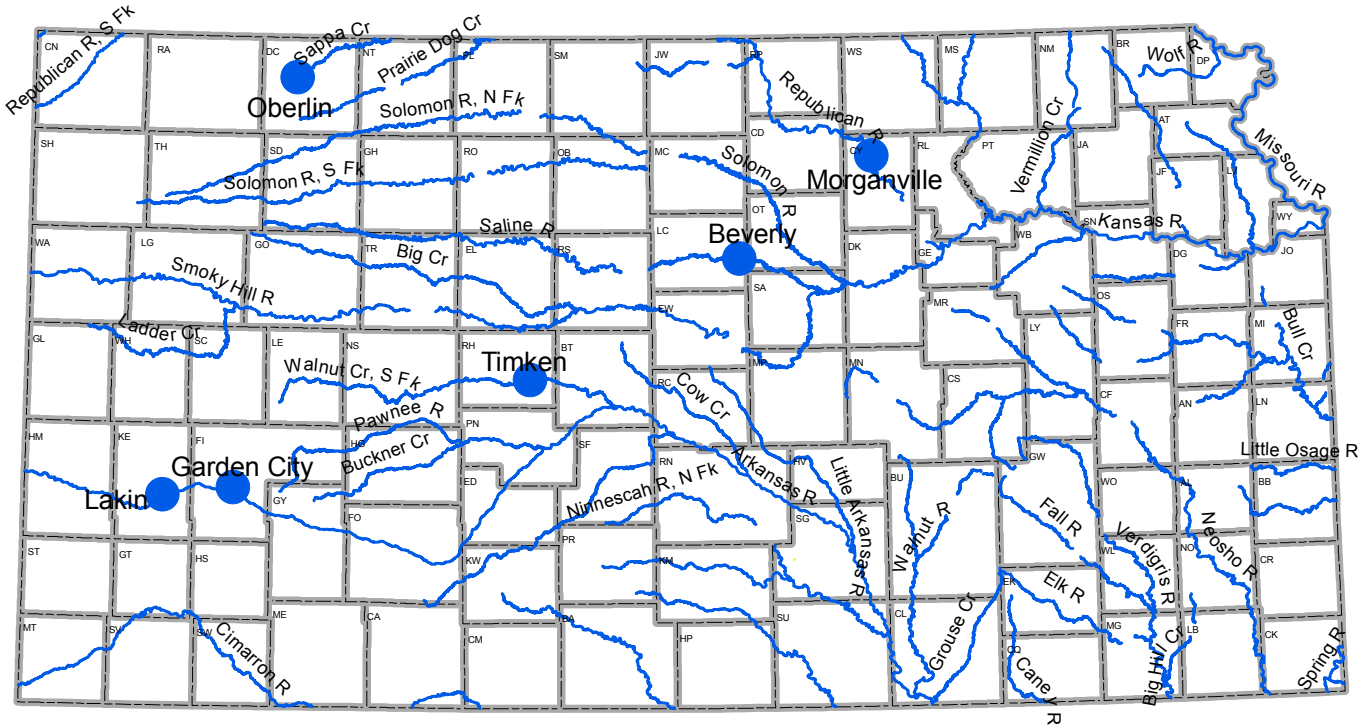
COMBINED URANIUM VIOLATIONS 2010



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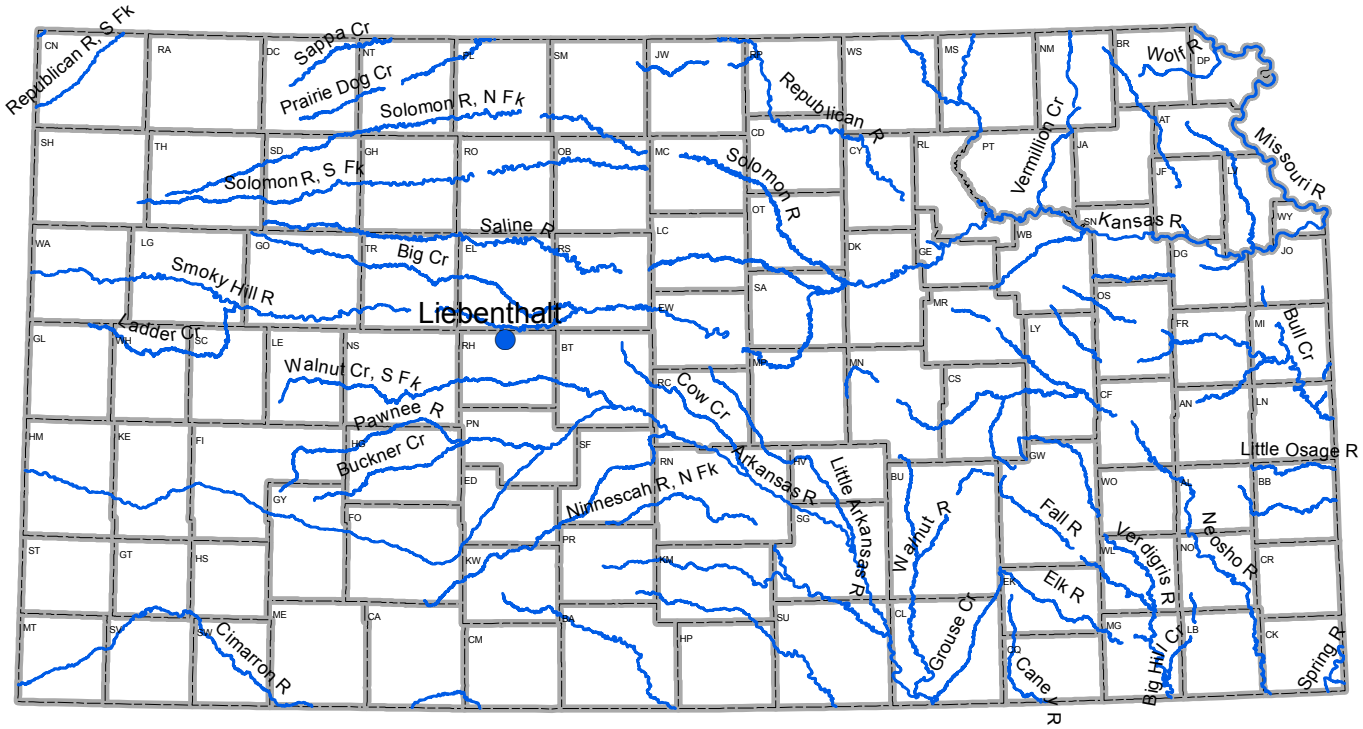
FLUORIDE MCL VIOLATIONS 2010



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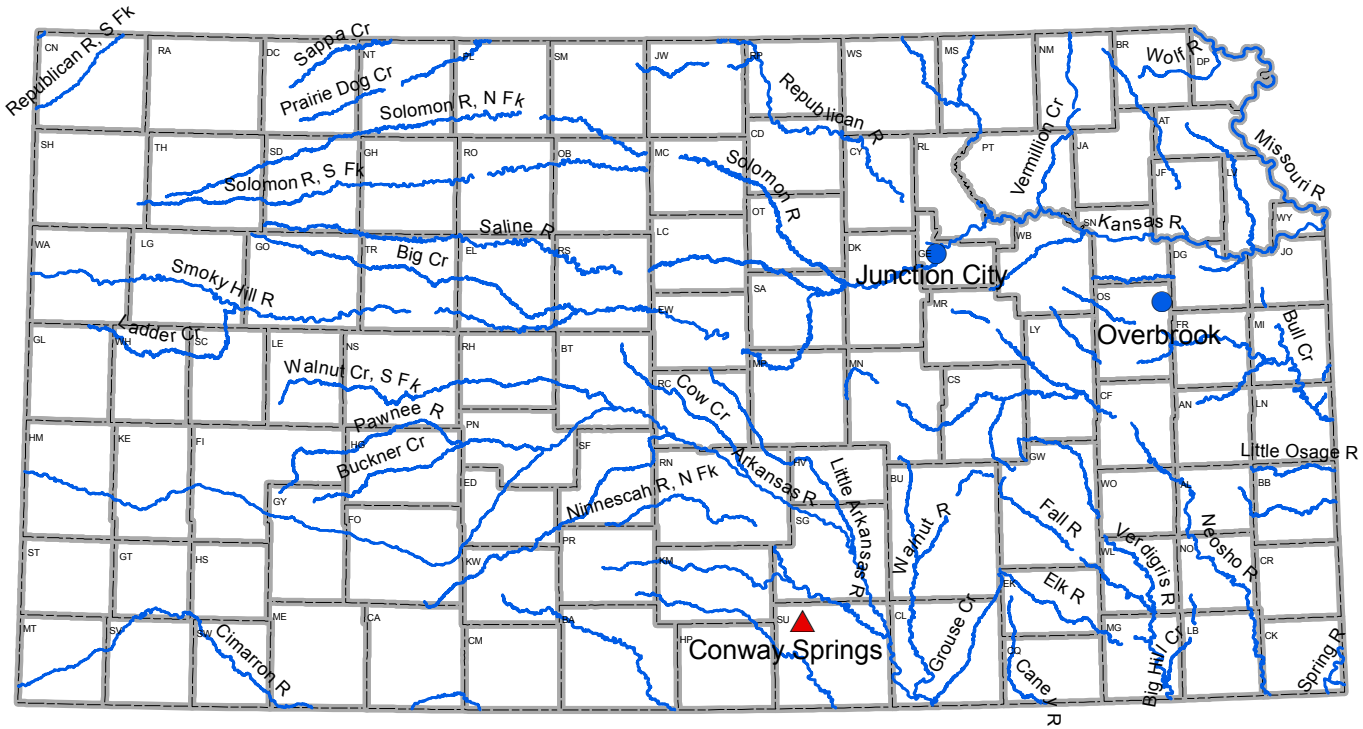
GROUND WATER MONITORING AND TREATMENT TECHNIQUE VIOLATIONS 2010



GROUND WATER TREATMENT TECHNIQUE

GROUND WATER MONITORING

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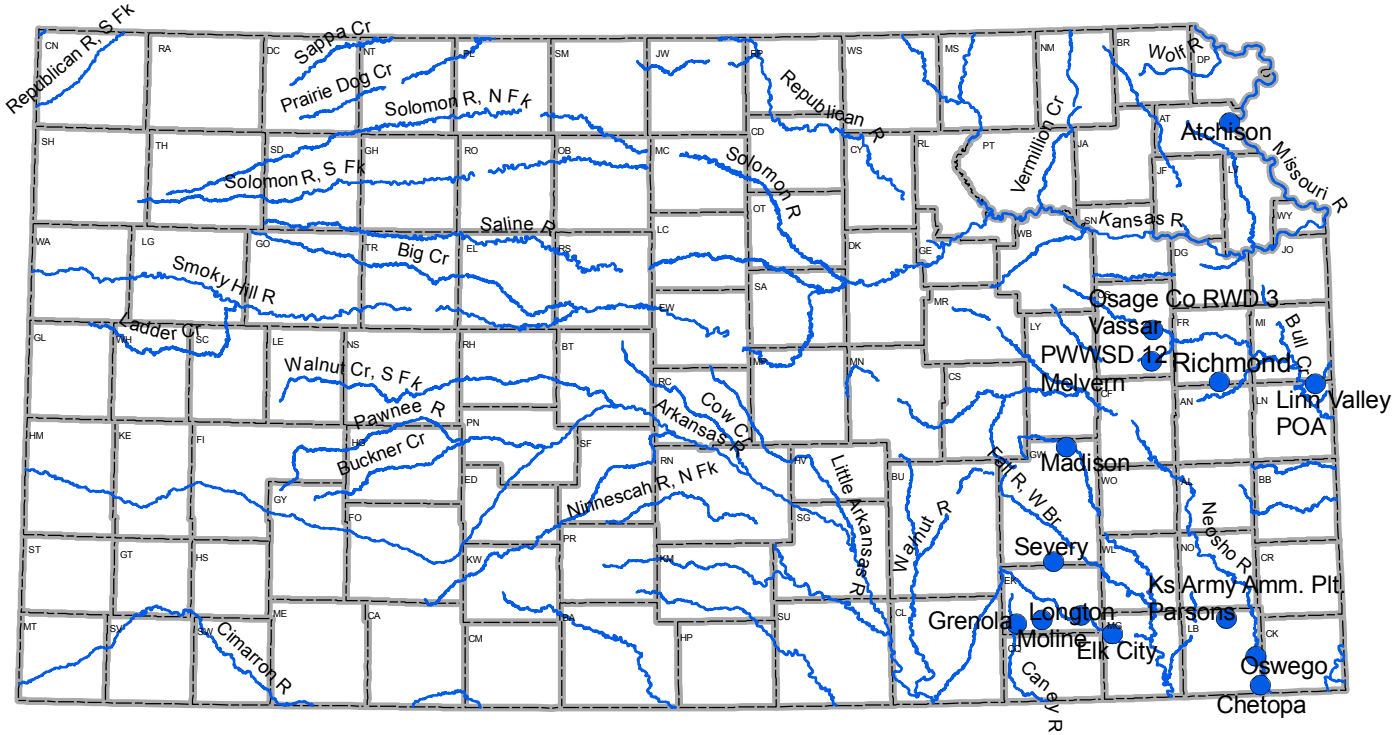
HALOACETIC ACIDS (HAA5) MCL VIOLATIONS 2010



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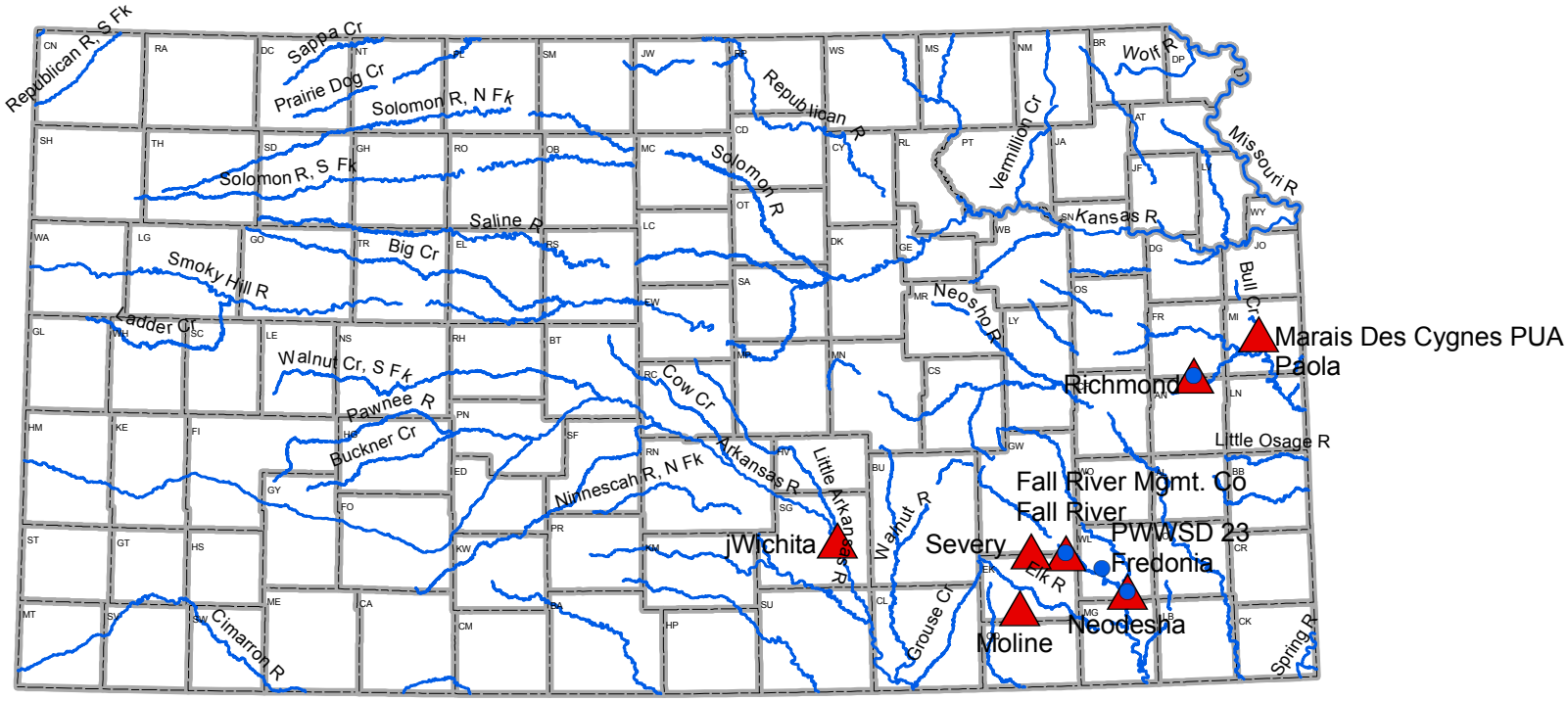
INTERIM ENHANCED SURFACE WATER TREATMENT TECHNIQUE VIOLATIONS 2010



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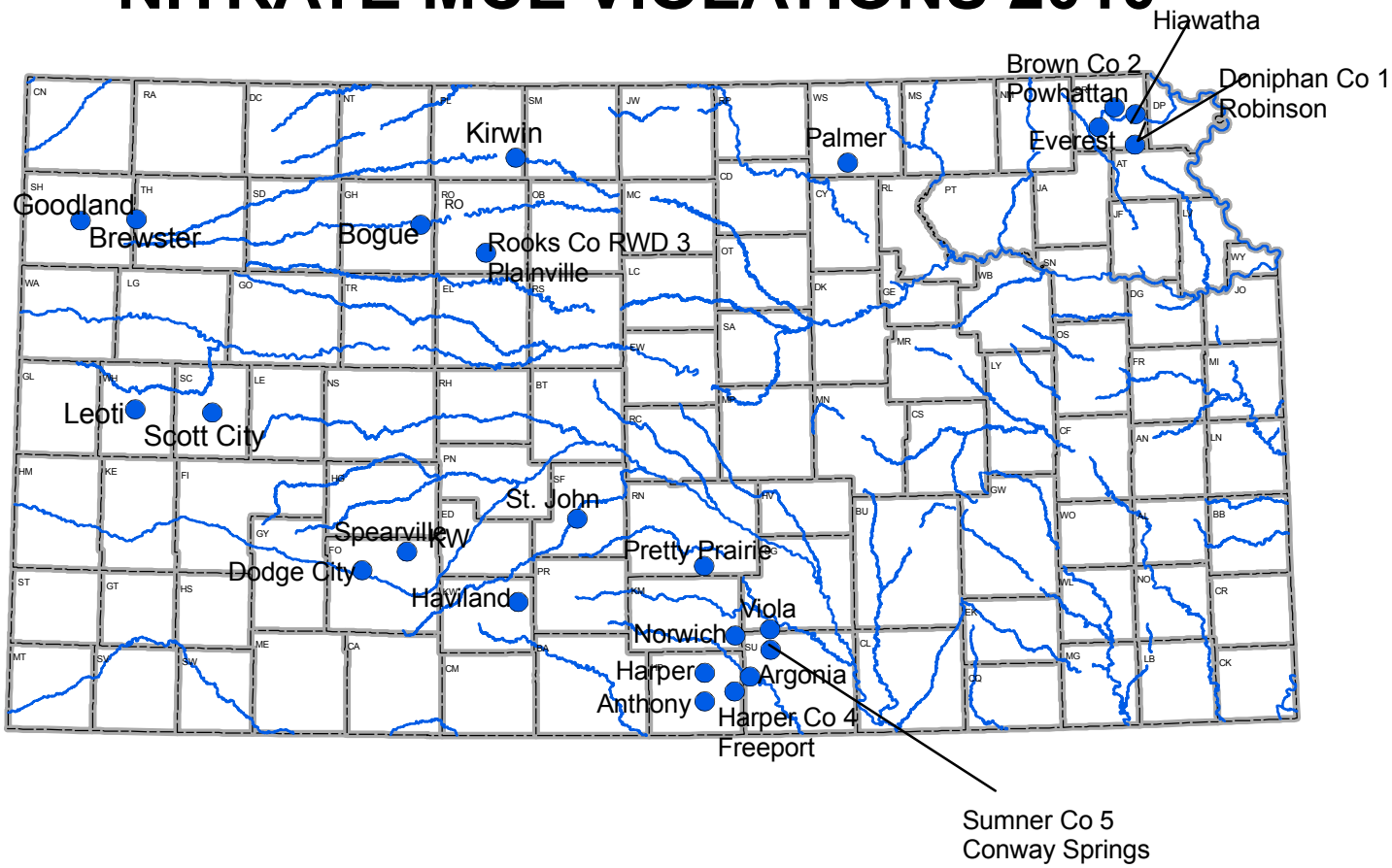
NITRATE MCL VIOLATIONS 2010



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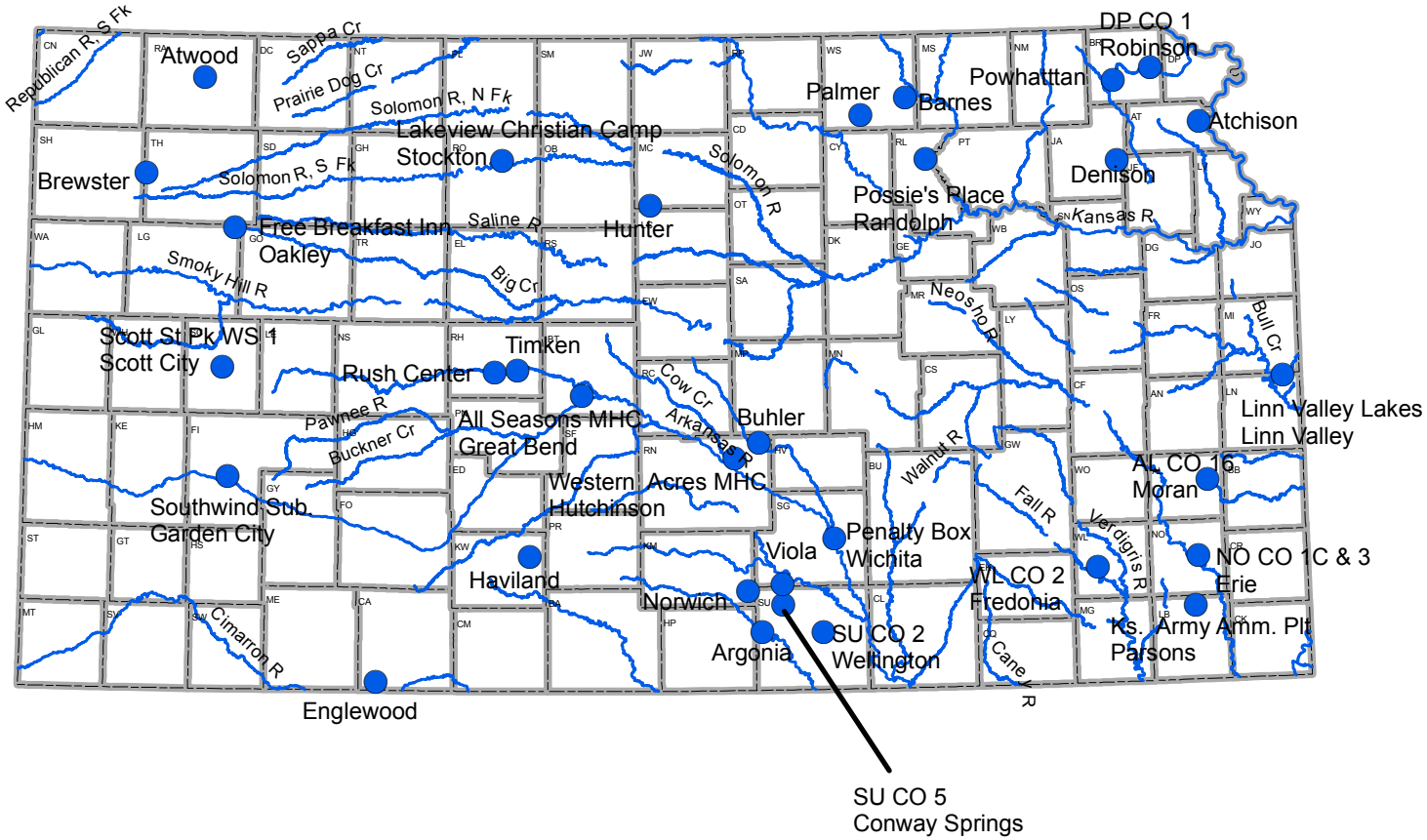
PUBLIC NOTICE VIOLATIONS 2010



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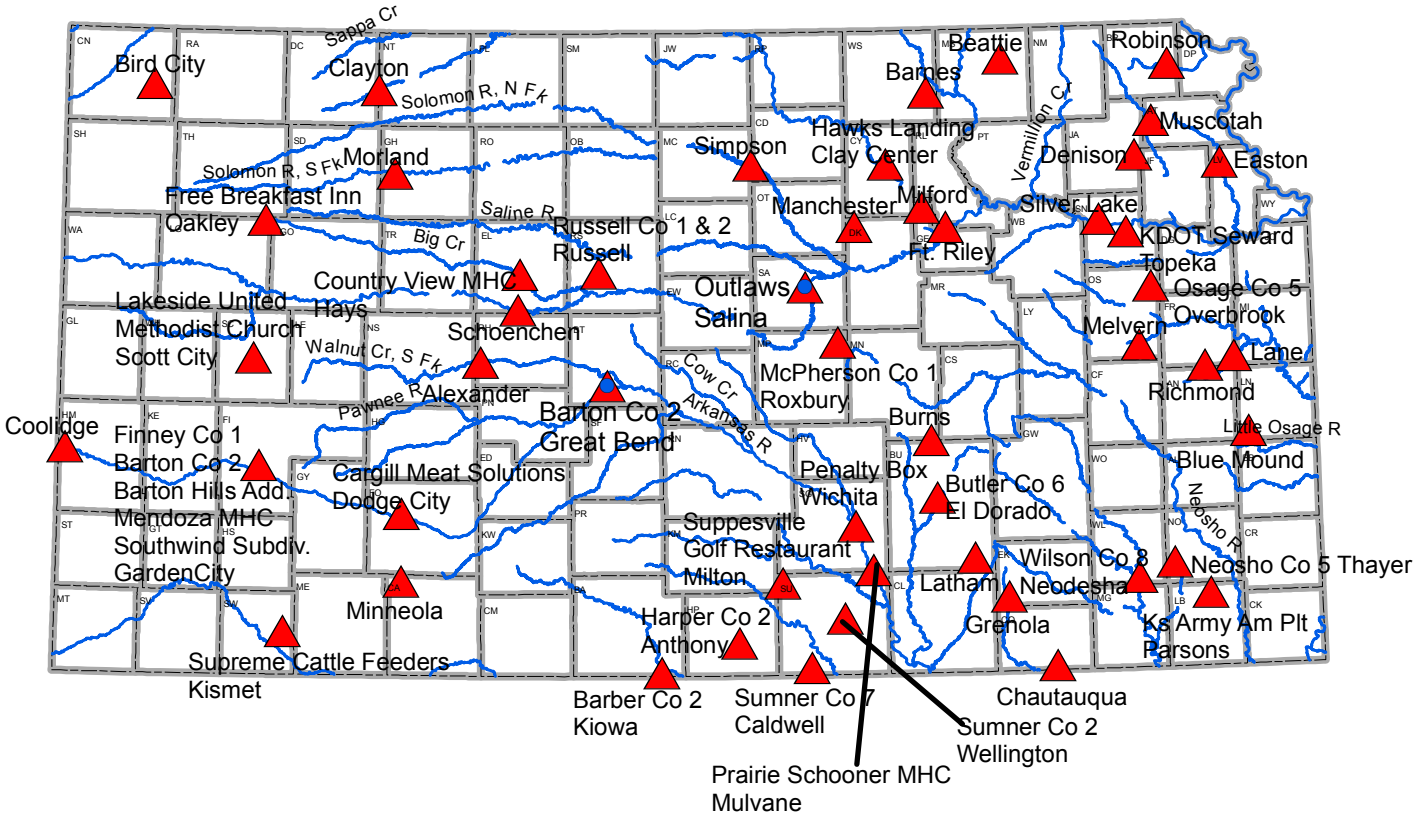
TOTAL COLIFORM ACUTE AND MONTHLY MCL VIOLATIONS 2010



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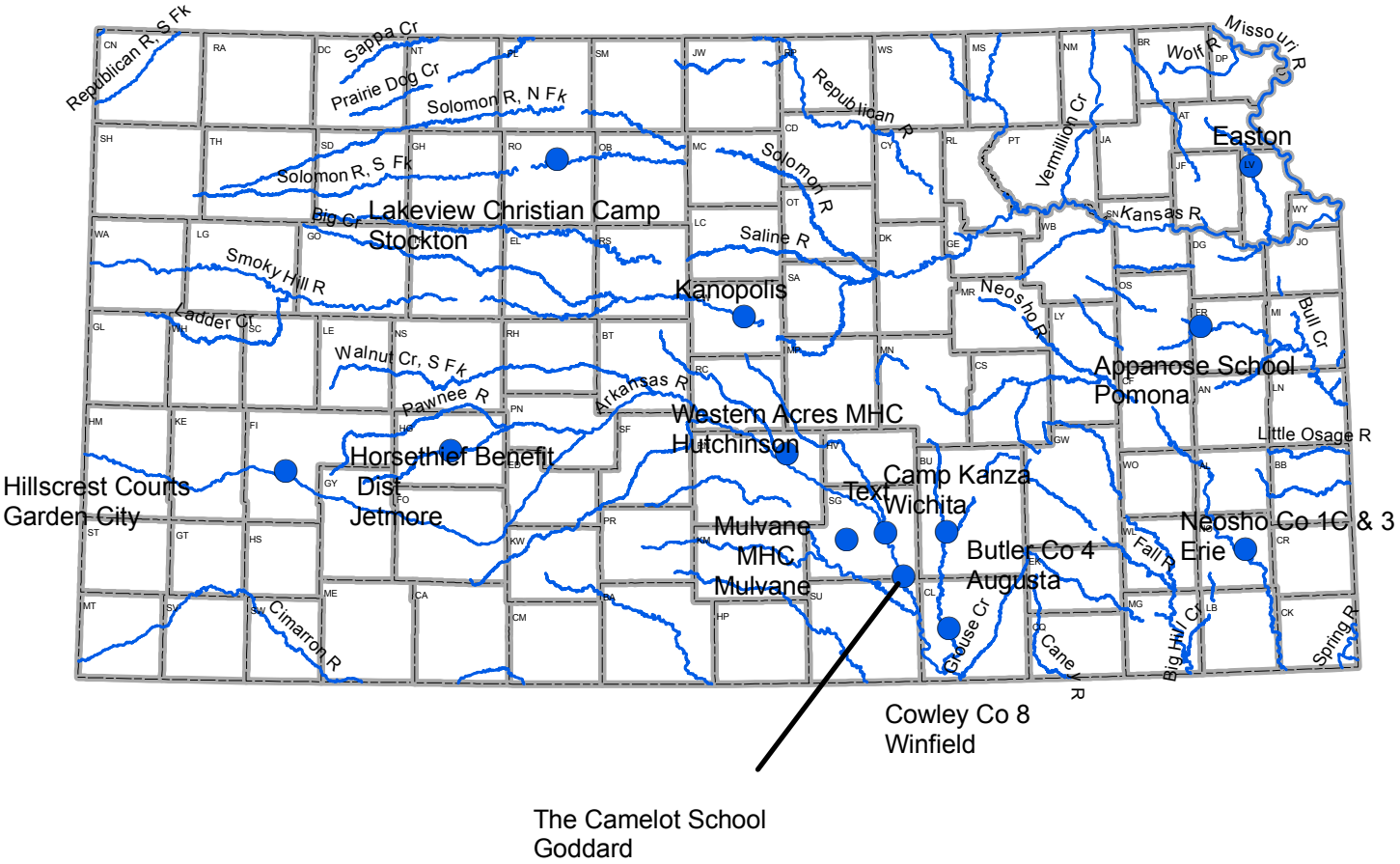
TOTAL COLIFORM MAJOR MONITORING VIOLATIONS 2010



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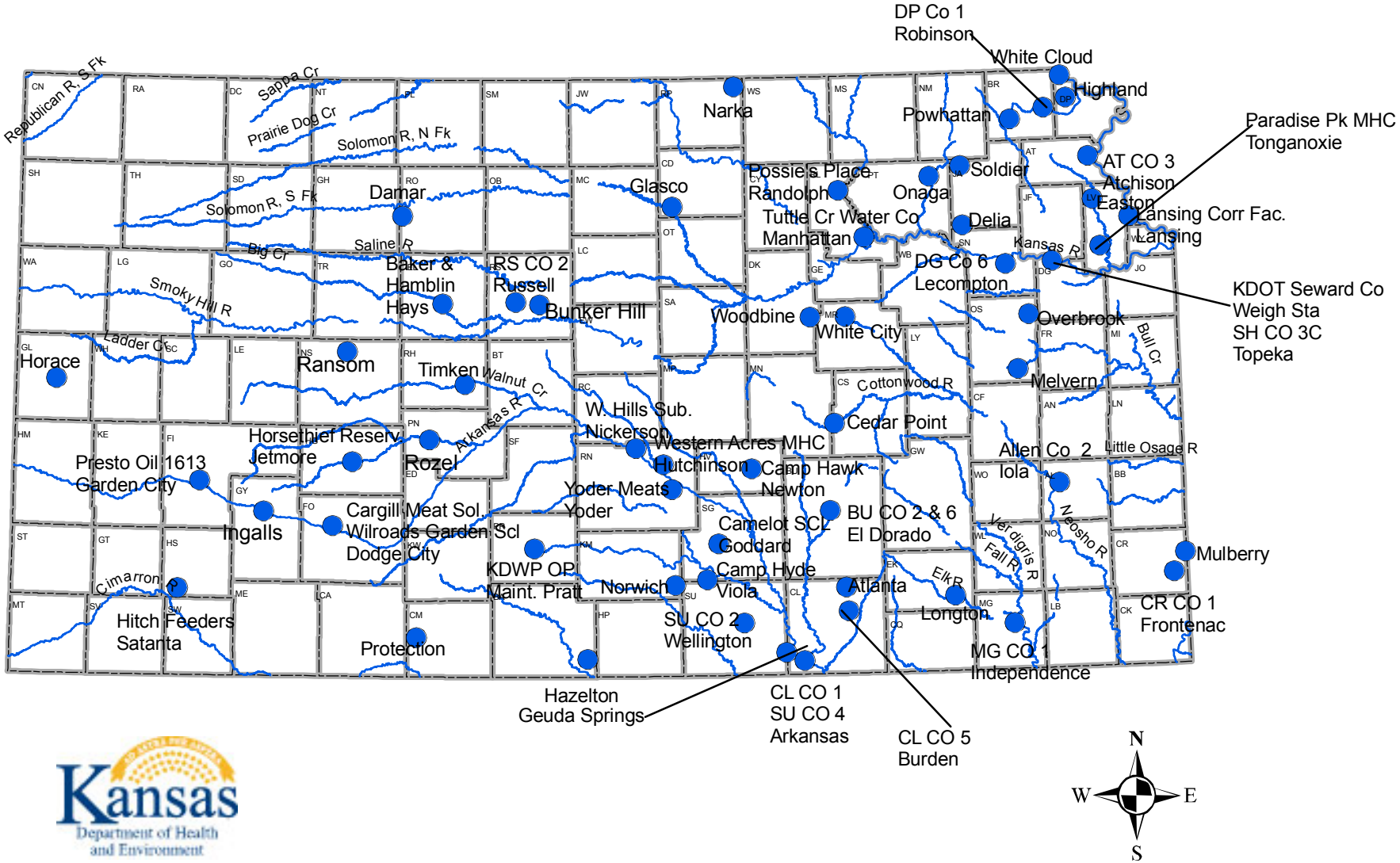
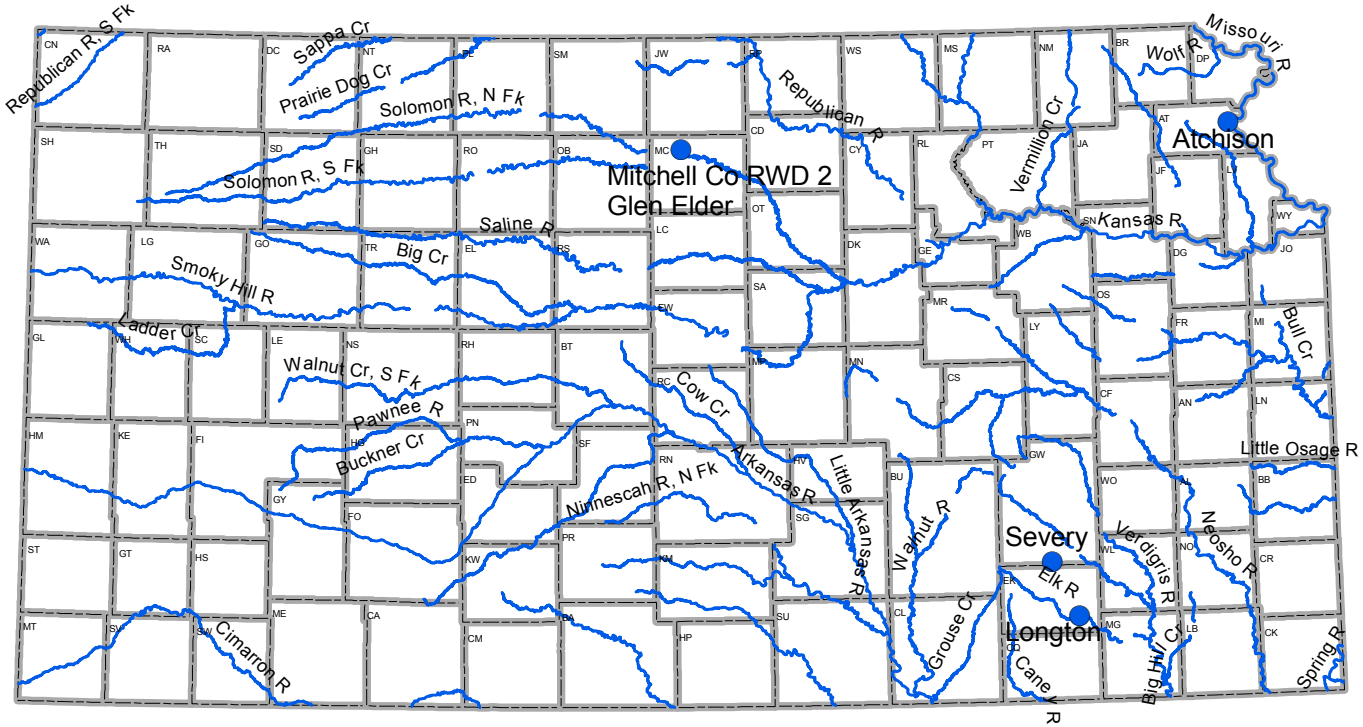
TOTAL COLIFORM MINOR MONITORING VIOLATIONS 2010



Kansas Department of Health and Environment

TOTAL ORGANIC CARBON (TOC) TREATMENT TECHNIQUE VIOLATIONS 2010



Kansas Department of Health and Environment

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W E
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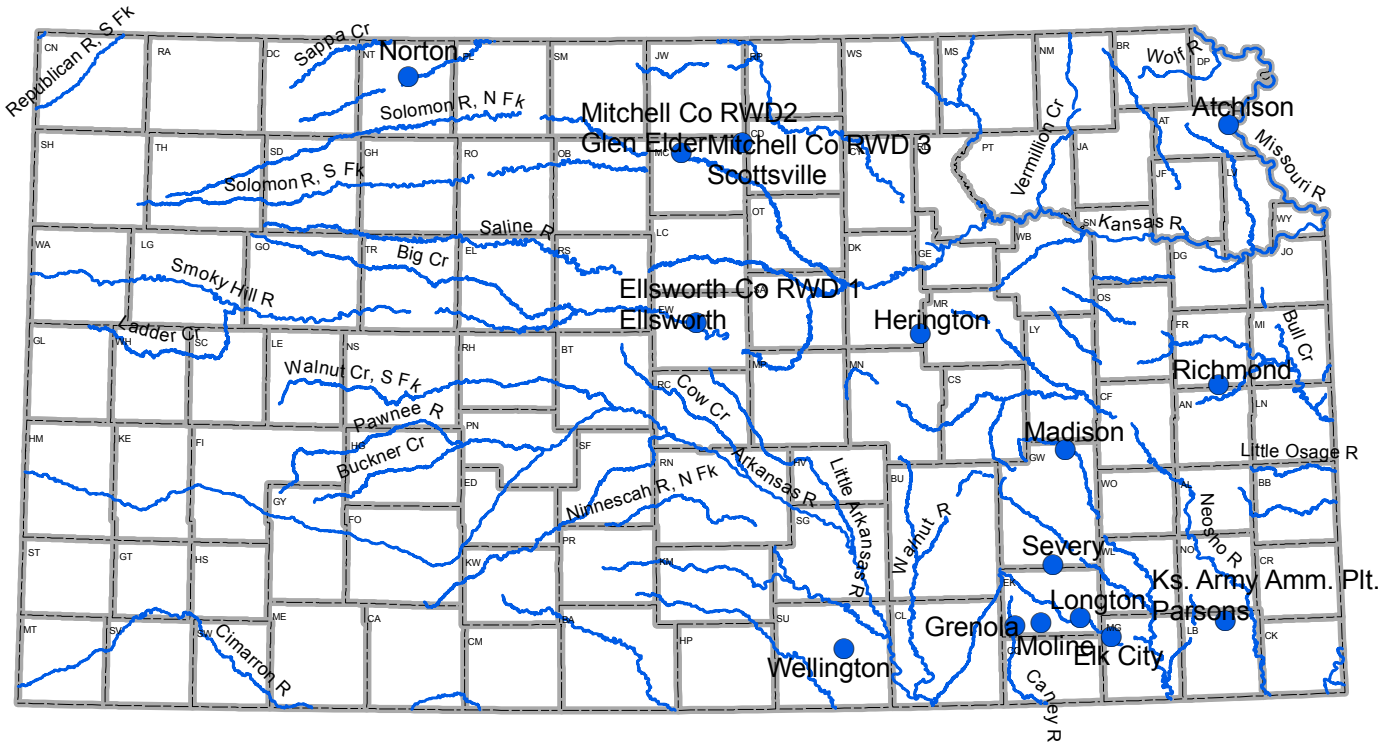
TOTAL TRIHALOMETHANES (TTHMS) MCL VIOLATIONS 2010



Kansas Department of Health and Environment

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W E
S

APPENDIX D

CHEMICAL GRAPHS

JULY 2011

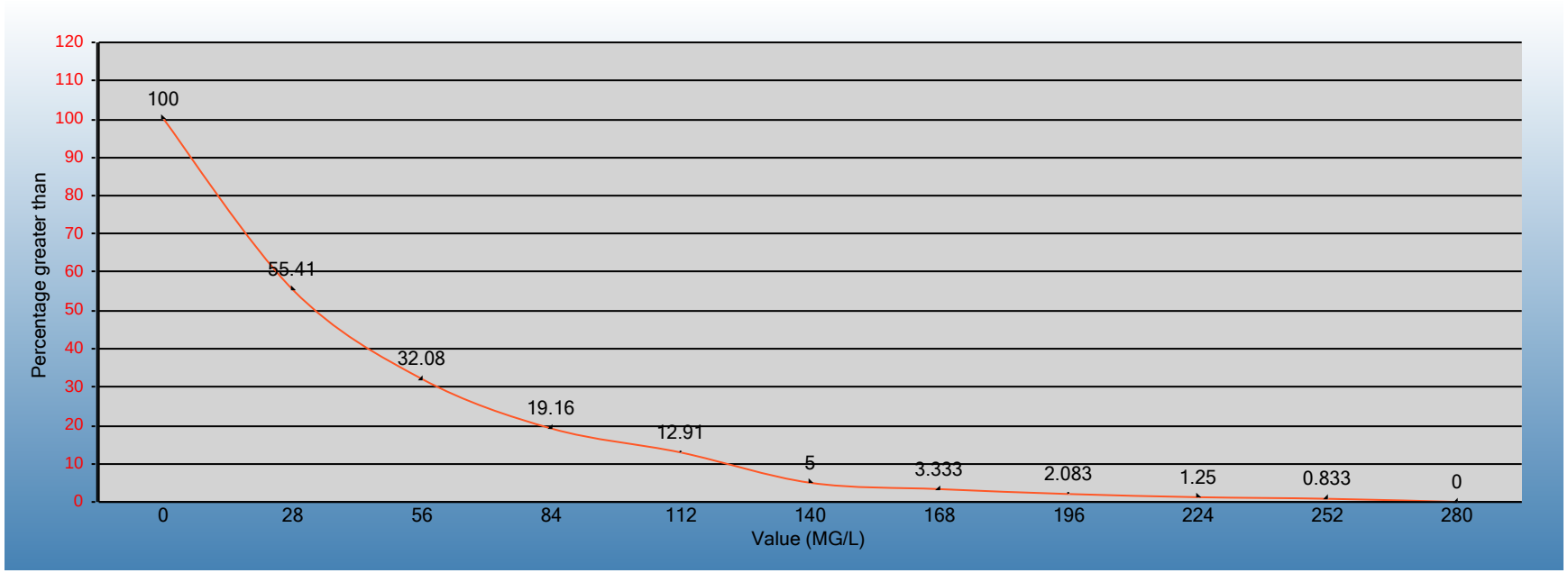
Kansas Department of Health and Environment

Our Vision – Healthy Kansans living in safe and sustainable environments.

Annual Compliance Report
Analyte Distribution Graph

Analyte CHLORIDE

Collection date 01/01/2010 ~ 12/31/2010

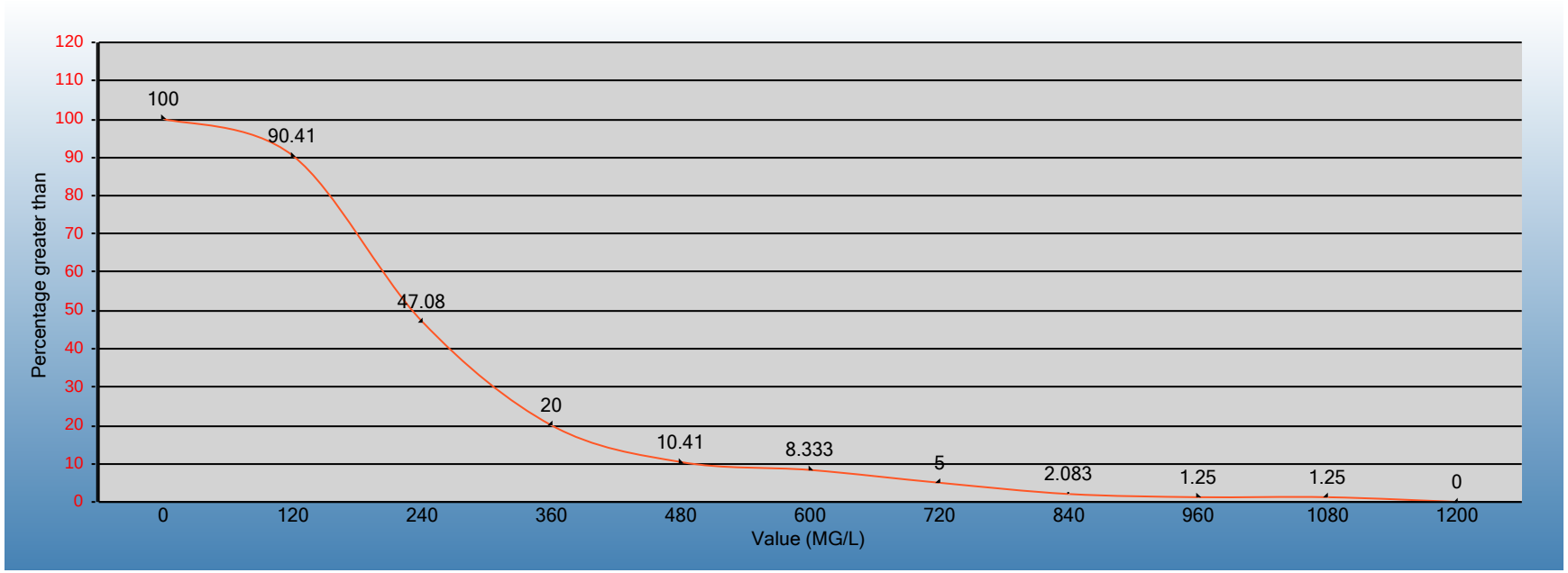


AVERAGE	46.6427518
MEDIAN	32
MODE	19
STANDARD DEVIATION	43.3912869

Annual Compliance Report
Analyte Distribution Graph

Analyte HARDNESS, TOTAL (AS CAC03)

Collection date 01/01/2010 ~ 12/31/2010

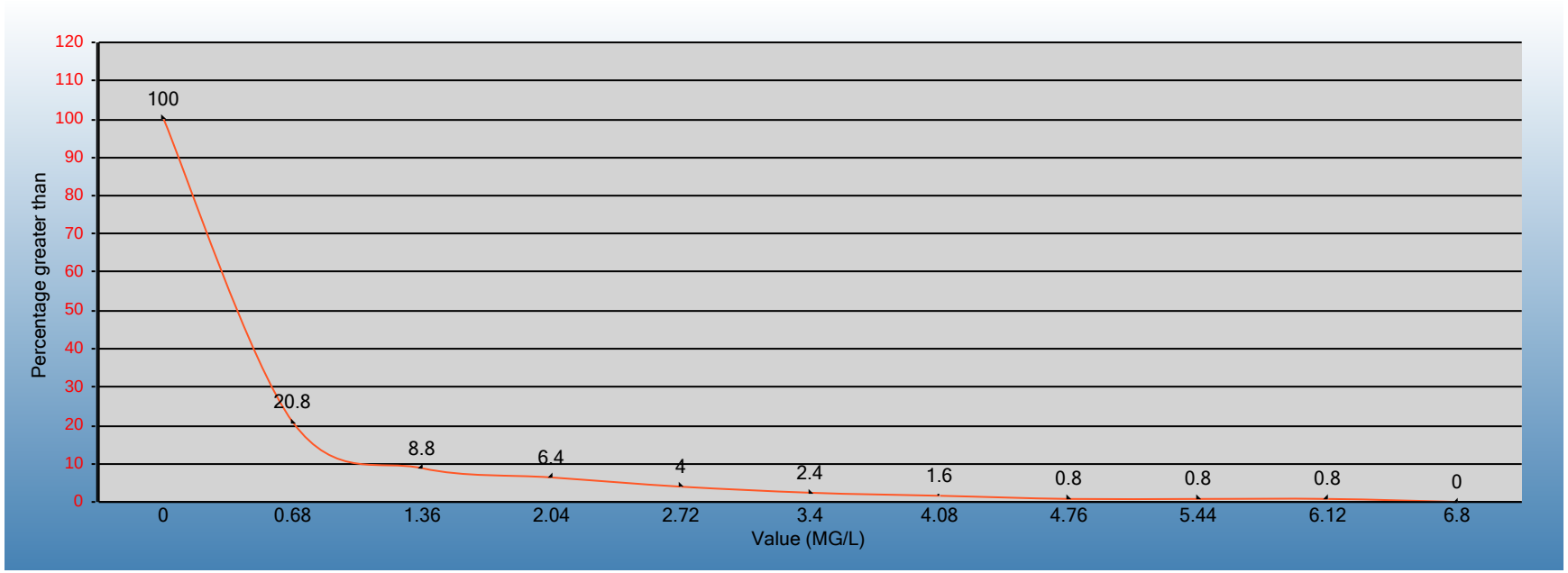


AVERAGE	280.741769
MEDIAN	240
MODE	170
STANDARD DEVIATION	173.011663

Annual Compliance Report
Analyte Distribution Graph

Analyte IRON

Collection date 01/01/2010 ~ 12/31/2010

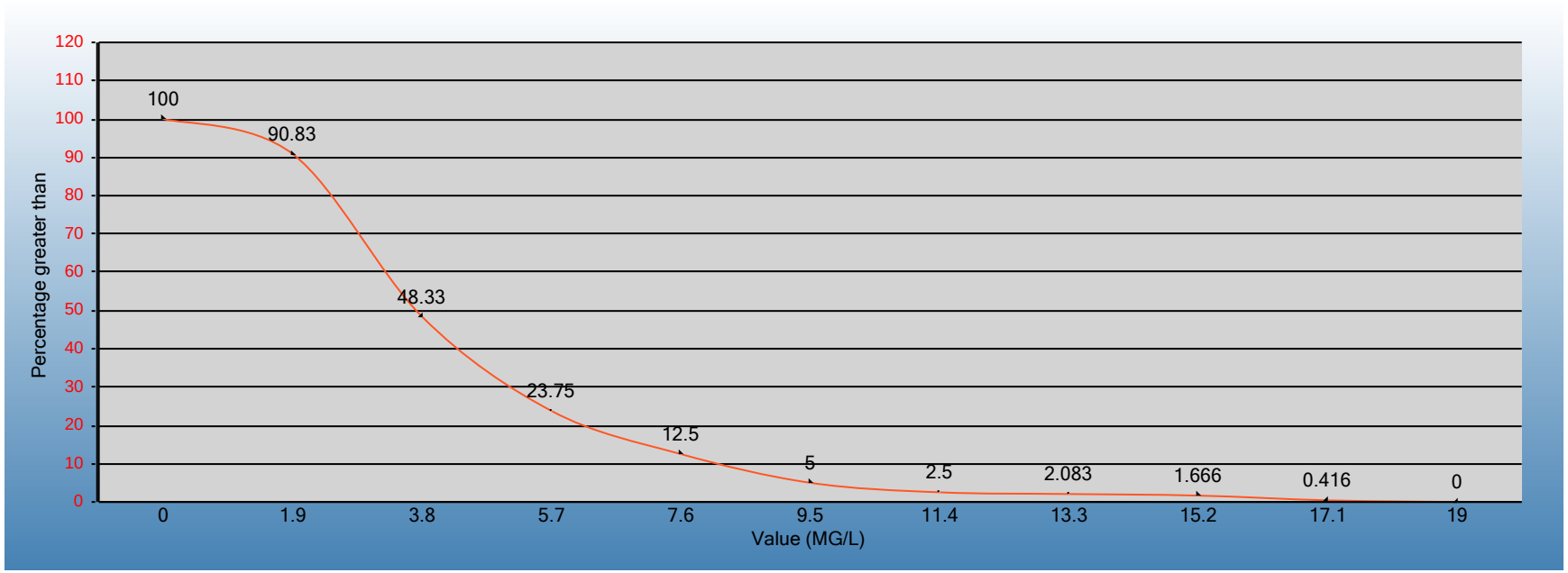


AVERAGE	.371174757
MEDIAN	.0785
MODE	.016
STANDARD DEVIATION	.780464269

Annual Compliance Report
Analyte Distribution Graph

Analyte POTASSIUM

Collection date 01/01/2010 ~ 12/31/2010

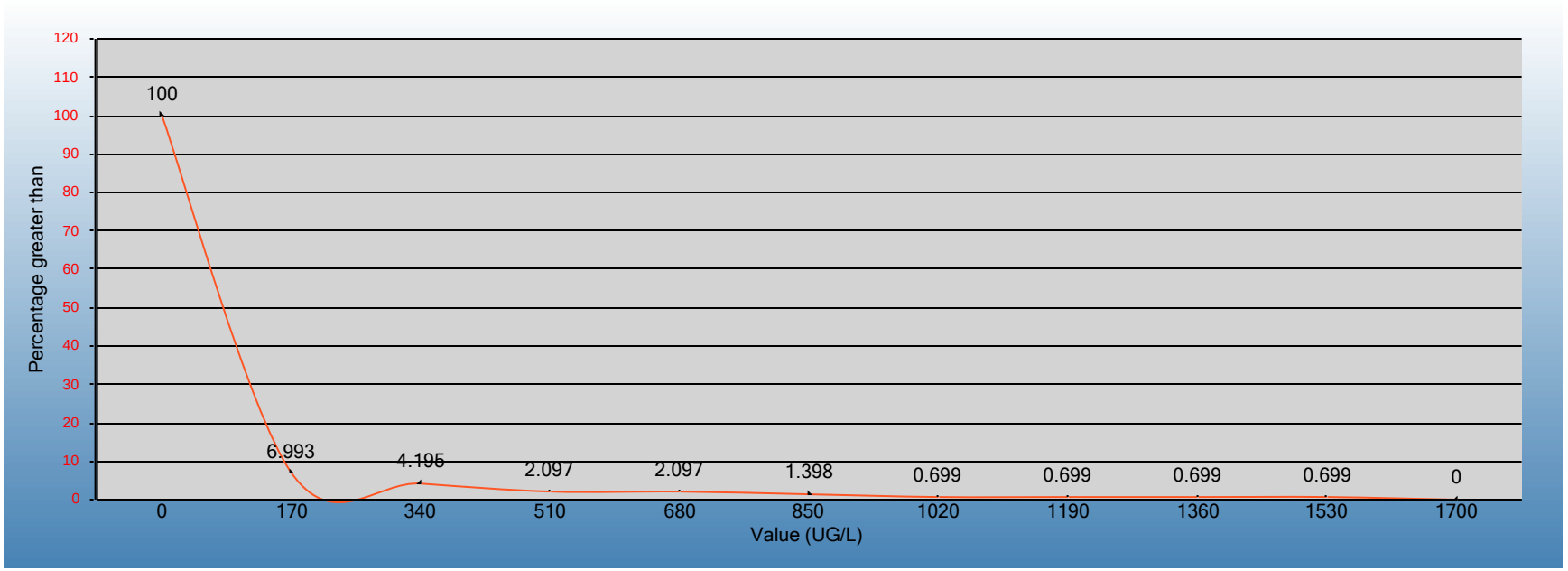


AVERAGE	4.50437346
MEDIAN	3.9
MODE	2.5
STANDARD DEVIATION	2.53435071

Annual Compliance Report
Analyte Distribution Graph

Analyte MANGANESE

Collection date 01/01/2010 ~ 12/31/2010

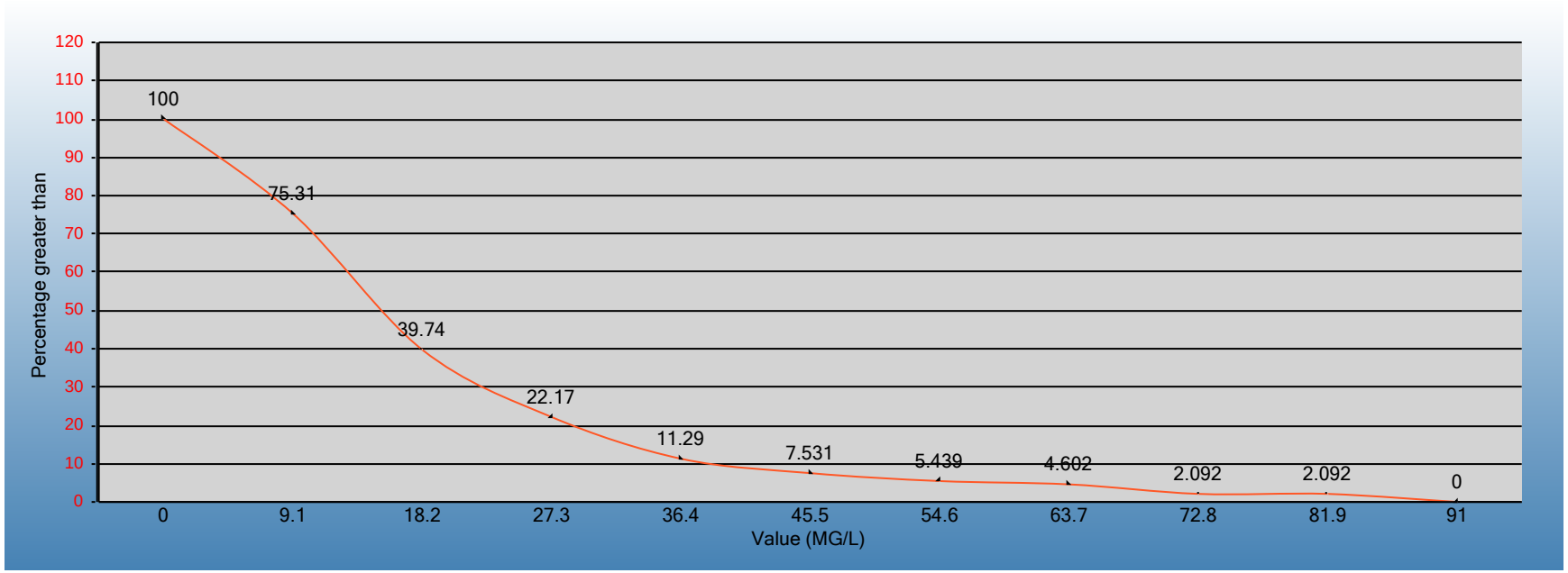


AVERAGE	57.9971428
MEDIAN	5.9
MODE	2.3
STANDARD DEVIATION	195.599909

Annual Compliance Report
Analyte Distribution Graph

Analyte MAGNESIUM

Collection date 01/01/2010 ~ 12/31/2010

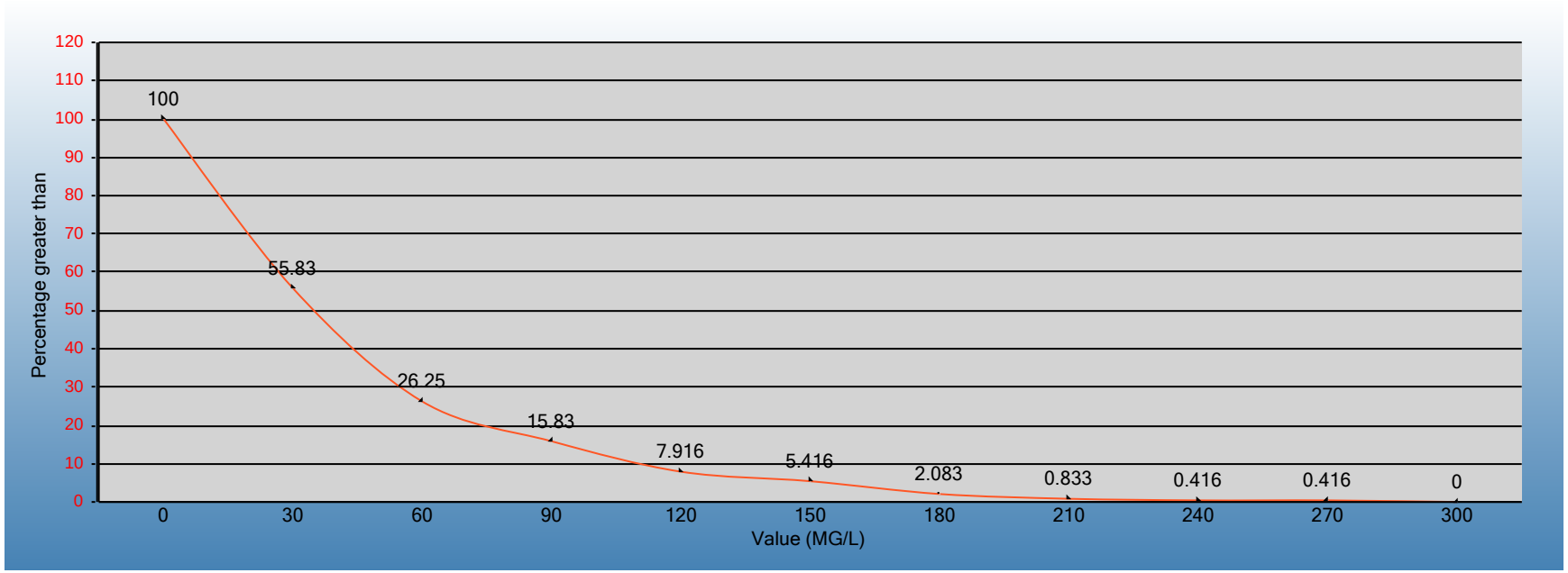


AVERAGE	20.6856722
MEDIAN	17
MODE	10
STANDARD DEVIATION	15.1954320

Annual Compliance Report
Analyte Distribution Graph

Analyte SODIUM

Collection date 01/01/2010 ~ 12/31/2010

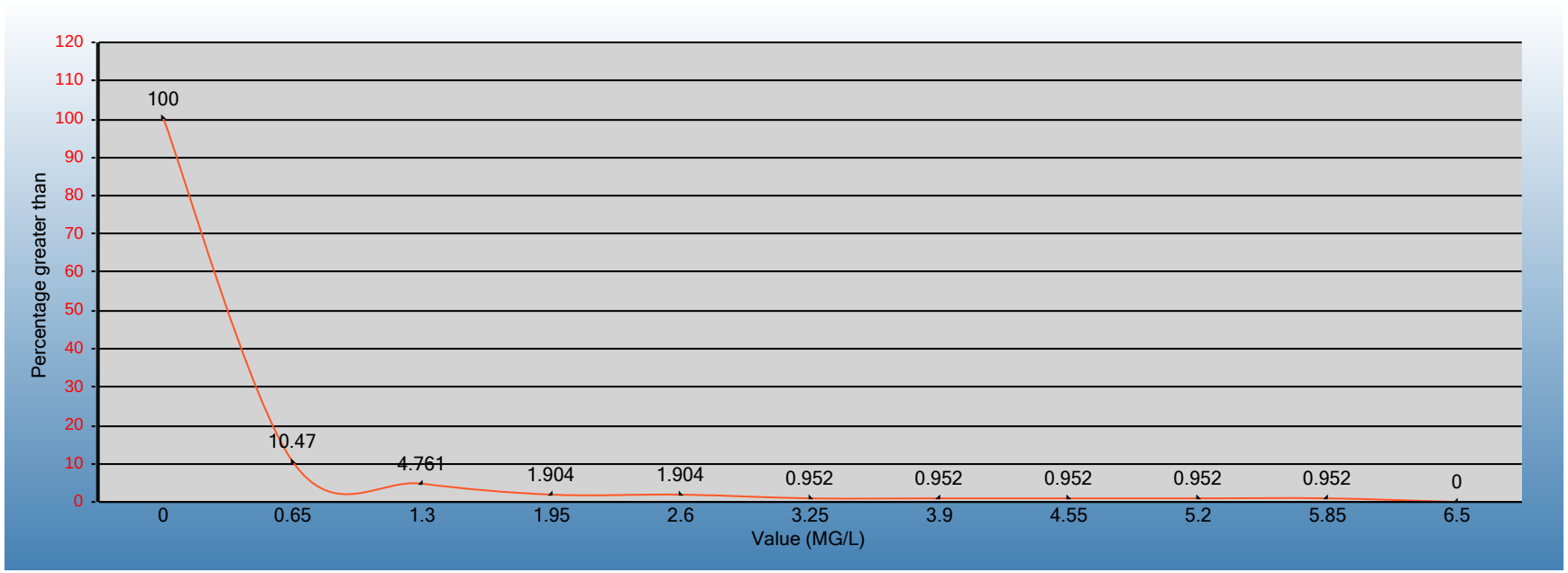


AVERAGE	46.1479115
MEDIAN	33
MODE	16
STANDARD DEVIATION	40.2172363

Annual Compliance Report
Analyte Distribution Graph

Analyte PHOSPHORUS, TOTAL

Collection date 01/01/2010 ~ 12/31/2010

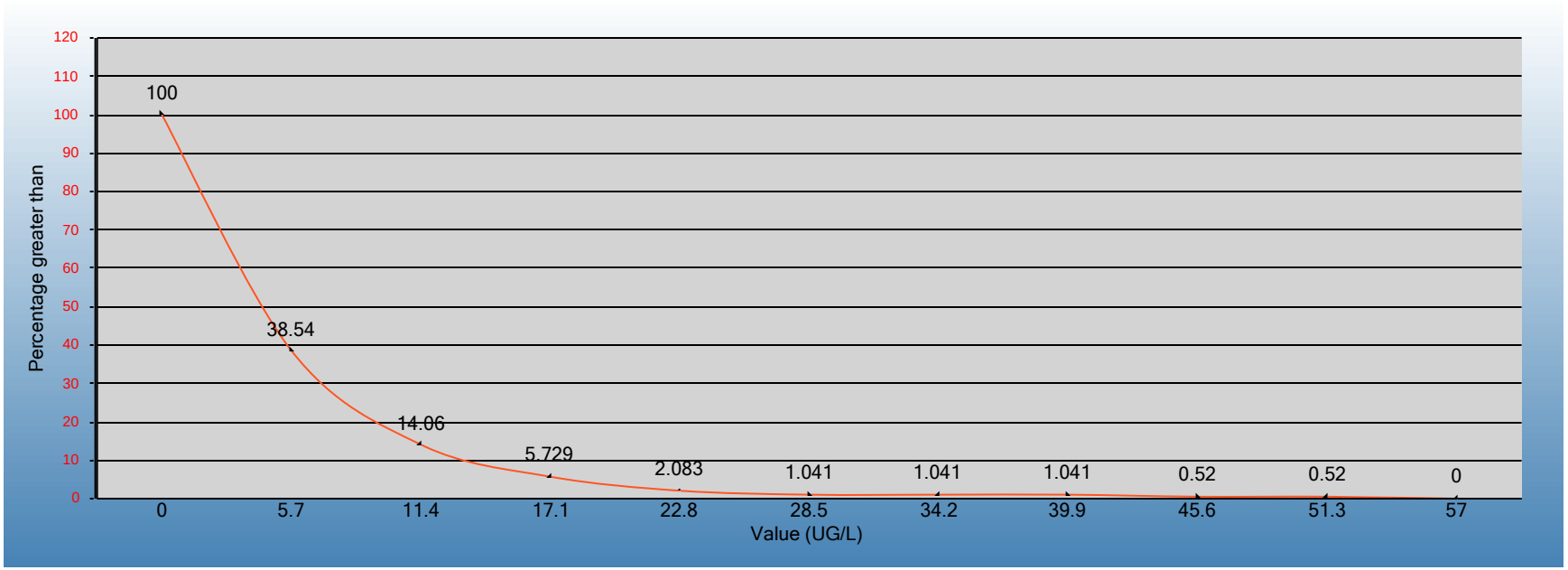


AVERAGE	.223336956
MEDIAN	.0615
MODE	.028
STANDARD DEVIATION	.596847231

Annual Compliance Report
Analyte Distribution Graph

Analyte SELENIUM

Collection date 01/01/2010 ~ 12/31/2010

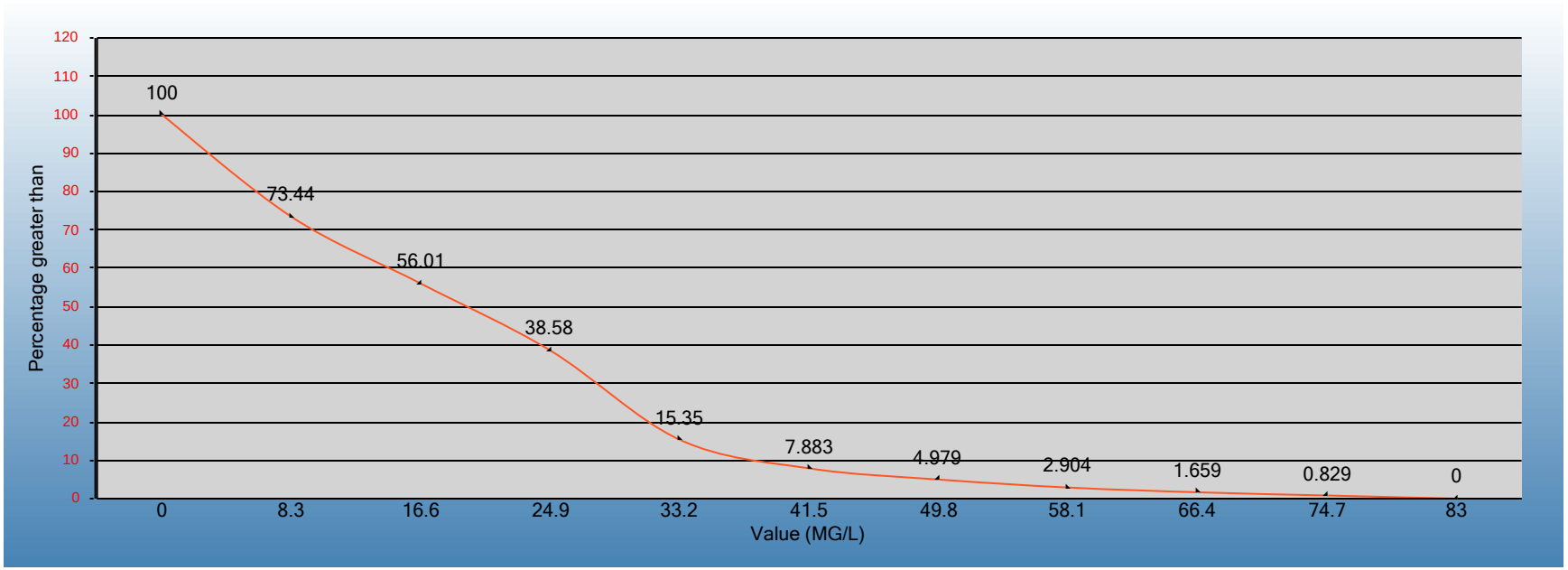


AVERAGE	6.55568862
MEDIAN	4.65
MODE	1.5
STANDARD DEVIATION	6.08303508

Annual Compliance Report
Analyte Distribution Graph

Analyte SILICA

Collection date 01/01/2010 ~ 12/31/2010

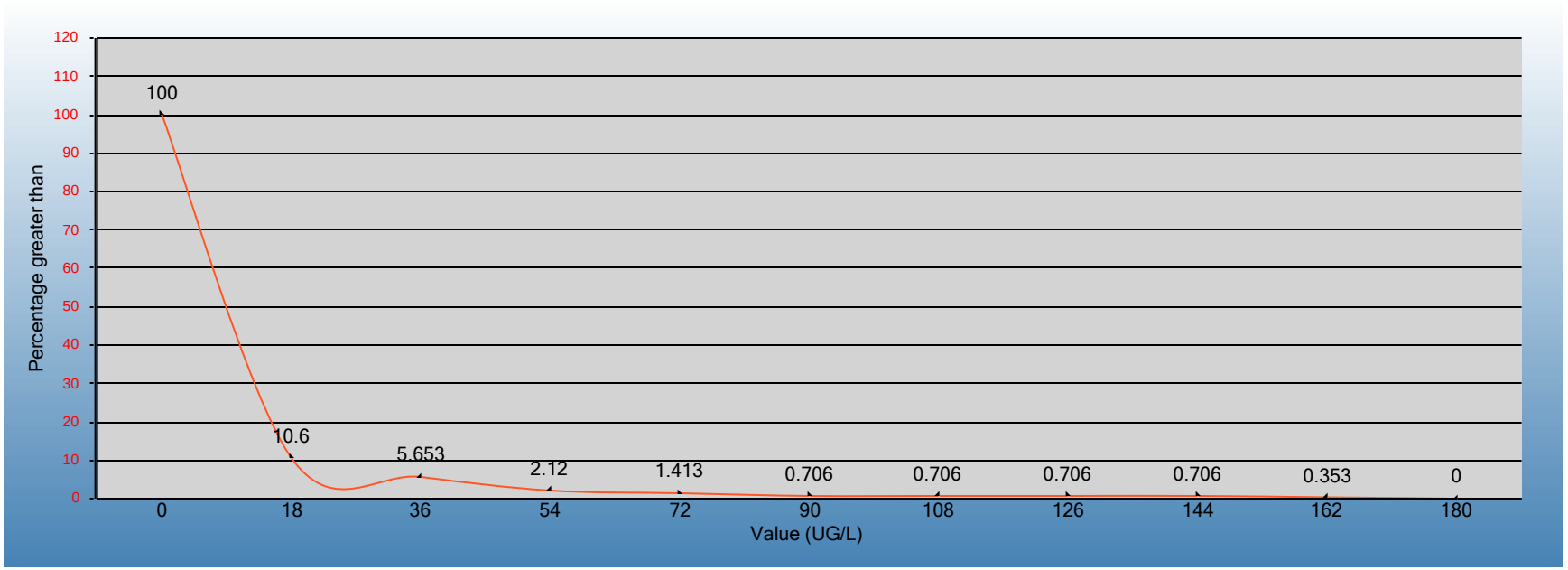


AVERAGE	23.6660146
MEDIAN	24
MODE	24
STANDARD DEVIATION	15.1590301

Annual Compliance Report
Analyte Distribution Graph

Analyte LEAD

Collection date 01/01/2010 ~ 12/31/2010

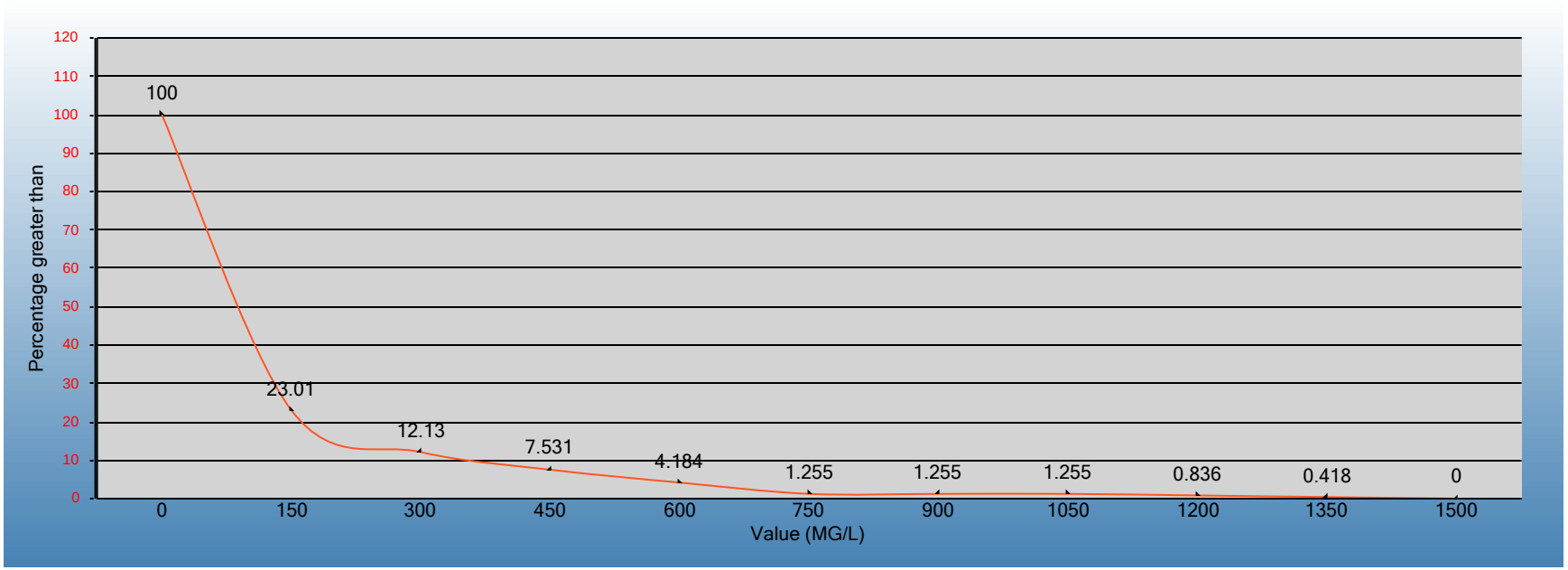


AVERAGE	3.86878083
MEDIAN	2
MODE	1.1
STANDARD DEVIATION	8.85113154

Annual Compliance Report
Analyte Distribution Graph

Analyte SULFATE

Collection date 01/01/2010 ~ 12/31/2010

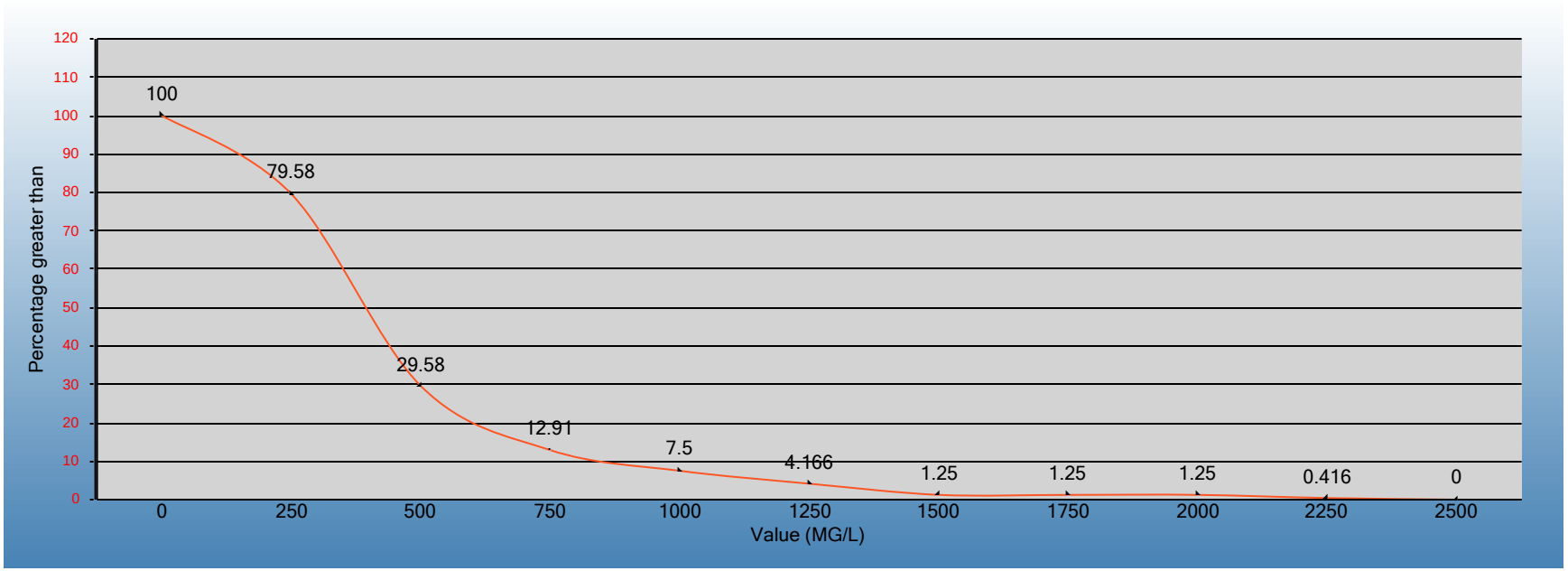


AVERAGE	127.133819
MEDIAN	60
MODE	110
STANDARD DEVIATION	178.262321

Annual Compliance Report
Analyte Distribution Graph

Analyte TDS

Collection date 01/01/2010 ~ 12/31/2010

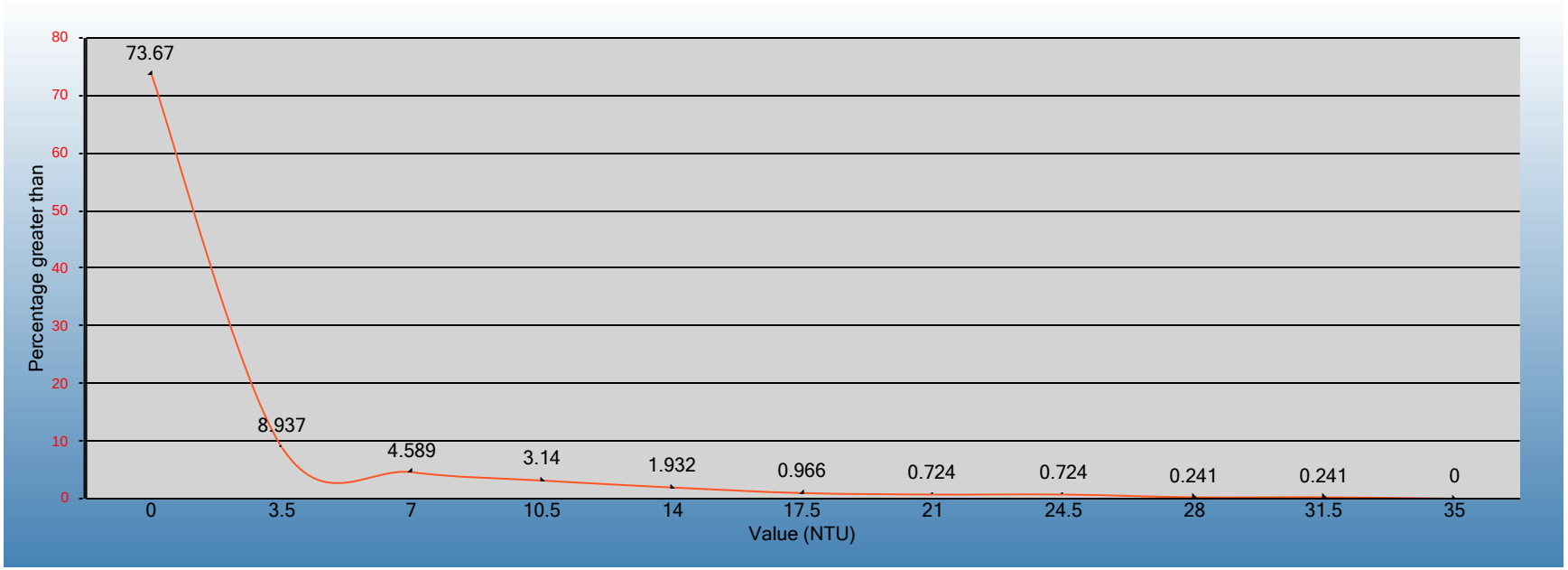


AVERAGE	467.886977
MEDIAN	390
MODE	440
STANDARD DEVIATION	299.243639

Annual Compliance Report
Analyte Distribution Graph

Analyte TURBIDITY

Collection date 01/01/2010 ~ 12/31/2010



AVERAGE	.235814562
MEDIAN	0
MODE	0
STANDARD DEVIATION	1.39595333

APPENDIX E

LIST OF KDHE CONTACTS

JULY 2011

Vision – Healthy Kansans living in safe and sustainable environments.

KDHE – BUREAU OF WATER
PUBLIC WATER SUPPLY
www.kdheks.gov

CONTACT NAME	AREA OF RESPONSIBILITY	PHONE	EMAIL
Karl Mueldener, P.E.	Director, Bureau of Water	(785) 296-5502	kmueldener@kdheks.gov
Dave Waldo, P.E.	Section Chief - Public Water Supply	(785) 296-5503	dwaldo@kdheks.gov

Permit & Engineering Unit

CONTACT NAME	AREA OF RESPONSIBILITY	PHONE	EMAIL
Dan Clair, P.E.	Engineering and Permit Unit Chief	(785) 296-5516	dclair@kdheks.gov
William Carr	Kansas PWS Loan Fund	(785) 296-0735	bcarr@kdheks.gov
Rex Cox, P.E.	Engineering Plan Review	(785) 296-5539	rcox@kdheks.gov
Paul Bodner, P.E.	Engineering Plan Review	(785) 368-8337	pbodner@kdheks.gov
Vacant	Engineering Plan Review	(785) 296-5797	
Vacant	Engineering Plan Review	(785) 296-0051	

Data and Compliance Unit

CONTACT NAME	AREA OF RESPONSIBILITY	PHONE	EMAIL
Darrel Plummer	Compliance and Data Management Unit Chief	(785) 296-5523	dplummer@kdheks.gov
Jonathan Haynes	Monitoring & Compliance Coordinator	(785) 296-0643	jhaynes@kdheks.gov
Andrew Hare	Lead and Copper, Disinfection Byproducts	(785) 296-5946	ahare@kdheks.gov
Dianne Sands	Inorganics, Volatile and Synthetic Compounds Nitrate, Radionuclides, Surface Water Treatment	(785) 368-8336	dsands@kdheks.gov
Jean Herrold	Bacteriological Monitoring	(785) 296-5518	jherrold@kdheks.gov
Ellan Spivey	Data Management & PWS Inventory	(785) 296-6434	espivey@kdheks.gov
Christianne Huard	Administrative Assistant	(785) 296-7111	chuard@kdheks.gov
Vacant	Enforcement, Regulations and Training	(785) 296-6297	
Patti Croy	Annual Compliance Report, Consumer Confidence Report, Enforcement	(785) 296-3016	pcroy@kdheks.gov

CONTACT NAME	AREA OF RESPONSIBILITY	PHONE	EMAIL
Cathy Tucker - Vogel	Capacity Development-Program Manager	(785) 368-7130	ctuckerv@kdheks.gov
Vickie Jo Wessel	Operator Certification	(785) 296-2976	vwessel@kdheks.gov
Jamie Gaggero	Source Water Assessment	(785) 296-5579	jgaggero@kdheks.gov