

State of Kansas
Department of Health and Environment
Notice of Hearing on Proposed Administrative Regulations

The Kansas Department of Health and Environment (KDHE), Division of Environment, Bureau of Water, will conduct a public hearing at 10:00 a.m. Wednesday, October 2, 2024, in the Azure Conference Room, 4th Floor, Curtis State Office Building, 1000 SW Jackson, Topeka, Kansas, to consider the adoption of proposed KDHE Article 16 permanent amended surface water quality standards regulations K.A.R. 28-16-28e and K.A.R. 28-16-28h.

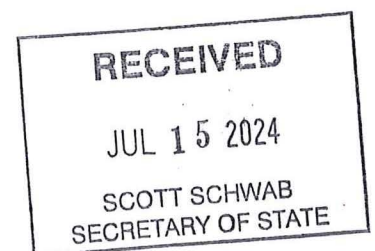
A summary of the proposed regulations, estimated economic impact, and environmental benefit follows:

K.A.R. 28-16-28e. Surface water quality criteria. Adopts the July 1, 2023, “Kansas Surface Water Quality Standards: Tables of Numeric Criteria.” This updated document revises 89 pollutant parameters under Public Health Use Categories to align with updated EPA criteria.

K.A.R. 28-16-28h. Surface water variance register. Adopts the October 1, 2023, “Kansas Surface Water Quality Standards Variance Register.” This revised document lists municipalities that qualify for a variance to numeric ammonia criteria according to an updated eligibility determination policy.

Economic Impact:

Cost to the agency: The proposed regulations will not result in increased costs to the agency. No new monitoring is required under the proposed changes to the “Kansas Surface Water Quality Standards: Tables of Numeric Criteria.”



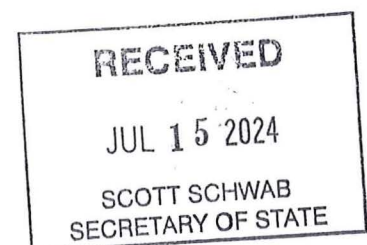
Cost to the public and regulated community: Two facilities have been flagged for compliance issues due to the new pollution parameters and will need to upgrade treatment processes to achieve compliance. The capital costs for one facility are estimated at \$400,000.00 and the capital costs for the other facility are estimated at \$430,000.00, with additional annual operation and maintenance costs listed as \$30,000.00 and \$20,000.00 respectively. The updated “Kansas Surface Water Quality Standards Variance Register” in K.A.R. 28-16-28h is not expected to result in additional capital costs to the regulated communities. Additionally, no immediate or long-range economic impact is expected for any individual and the general public with the implementation of the proposed regulations.

Costs to other governmental agencies or units: The proposed regulations will not increase costs to local government units.

A detailed economic impact is provided in the Economic Impact Statement that is available from the designated KDHE contact staff person or at the KDHE Policy Planning & Standards Unit website, as listed below.

Environmental Benefit:

The proposed regulations meet the mandate of the federal government under the Clean Water Act at 40 CFR §131.20 requiring states to update their surface water quality standards in a triennial review. These regulations are used by the KDHE Division of Environment for a number of functions, including informing and directing permitting decisions, determining impairment of state surface waters, and granting variances in relation to the mandated standards.



The time period between the publication of this notice and the scheduled hearing constitutes a 60-day public comment period for the purpose of receiving written public comments on the proposed regulations. All interested parties may submit written comments prior to 5:00 p.m. on the day of the hearing to Bruna Rossi Dos Santos, Kansas Department of Health and Environment, Bureau of Water, Curtis State Office Bldg., 1000 SW Jackson, Suite 420, Topeka, KS 66612 or by email to Bruna.Rossi@ks.gov. Interested parties are encouraged to participate in the public hearing by submitting written comments.

During the hearing, all interested parties will be given a reasonable opportunity to present their views orally on the proposed regulations as well as an opportunity to submit their written comments. It is requested that each individual giving oral comments also provide a written copy of the comments for the record. In order to give each individual an opportunity to present their views, it may be necessary for the hearing officer to request that each presenter limit an oral presentation to an appropriate time frame.

Complete copies of the proposed regulations and the corresponding Economic Impact Statement and Environmental Benefit Statement may be obtained from the KDHE Policy Planning & Standards Unit website at <https://www.kdhe.ks.gov/1379/Policy-Planning-Standards-Unit> or by contacting Bruna Rossi Dos Santos at Bruna.Rossi@ks.gov or 785-296-8229. Questions pertaining to the proposed regulations should be directed to Bruna Rossi Dos Santos at the contact information above.

Any individual with a disability may request accommodation in order to participate in the public hearing and may request the proposed regulations and the

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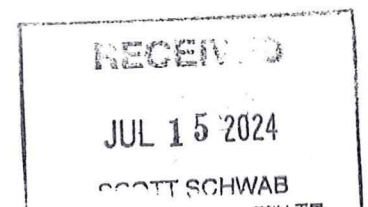
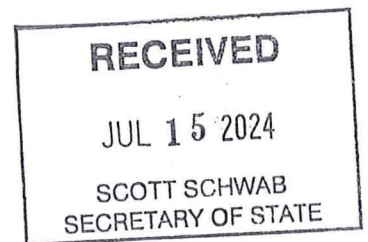
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economic impact statement and environmental benefit statement in an accessible format.

Requests for accommodation to participate in the hearing should be made at least five working days in advance of the hearing by contacting Bruna Rossi Dos Santos.

Janet Stanek
Secretary
Department of Health and Environment



28-16-28e. Surface water quality criteria. (a) Criteria development guidance. The development of surface water quality criteria for substances not listed in these standards shall be guided by water quality criteria published by the EPA. If the department finds that the criteria listed in this regulation are underprotective or overprotective for a given surface water segment, appropriate site-specific criteria may be developed and applied by the department, in accordance with K.A.R. 28-16-28f, using bioassessment methods or other related scientific procedures, including those procedures consistent with the EPA's "water quality standards handbook," second edition, as published in August 1994, or other department-approved methods.

(b) General criteria for surface waters. The following criteria shall apply to all surface waters, regardless of classification:

(1) Surface waters shall be free, at all times, from the harmful effects of substances that originate from artificial sources of pollution and that produce any public health hazard, nuisance condition, or impairment of a designated use.

(2) Hazardous materials derived from artificial sources, including toxic substances, radioactive isotopes, and infectious microorganisms derived from point sources or nonpoint sources, shall not occur in surface waters at concentrations or in combinations that jeopardize the public health or the survival or well-being of livestock, domestic animals, terrestrial wildlife, or aquatic or semiaquatic life.

(3) Surface waters shall be free of all discarded solid materials, including trash, garbage, rubbish, offal, grass clippings, discarded building or construction materials, car bodies, tires, wire, and other unwanted or discarded materials. The placement of stone and concrete rubble for bank stabilization shall be acceptable to the department if all other required permits are obtained

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before placement.

(4) Surface waters shall be free of floating debris, scum, foam, froth, and other floating materials directly or indirectly attributable to artificial sources of pollution.

(5) Oil and grease from artificial sources shall not cause any visible film or sheen to form upon the surface of the water or upon submerged substrate or adjoining shorelines, nor shall these materials cause a sludge or emulsion to be deposited beneath the surface of the water or upon the adjoining shorelines.

(6) Surface waters shall be free of deposits of sludge or fine solids attributable to artificial sources of pollution.

(7) Taste-producing and odor-producing substances from artificial sources shall not occur in surface waters at concentrations that interfere with the production of potable water by conventional water treatment processes, that impart an unpalatable flavor to edible aquatic or semiaquatic life or terrestrial wildlife, or that result in noticeable odors in the vicinity of surface waters.

(8) The natural appearance of surface waters shall not be altered by the addition of color-producing or turbidity-producing substances from artificial sources.

(9) In stream segments where background concentrations of naturally occurring substances, including chlorides and sulfates, exceed the water quality criteria listed in table 1a of the "Kansas surface water quality standards: tables of numeric criteria," as adopted by reference in subsection (e), the existing water quality shall be maintained, and the newly established numeric criteria shall be the background concentration. Background concentrations shall be

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established using the methods outlined in the “Kansas implementation procedures: surface water quality standards,” as adopted by reference in K.A.R. 28-16-28b, and available upon request from the department.

(c) Application of criteria for designated uses of surface waters.

(1) The numeric criteria in tables 1a, 1b, 1c, and 1d of the “Kansas surface water quality standards: tables of numeric criteria” shall not apply if the critical low flow is less than 0.03 cubic meter per second (1.0 cubic foot per second) for waters designated as expected aquatic life use waters and restricted aquatic life use waters, unless studies conducted or approved by the department show that water present during periods of no flow, or flow below critical low flow, provides important refuges for aquatic life and permits biological recolonization of intermittently flowing segments.

(2) The numeric criteria in tables 1a, 1b, 1c, and 1d of the “Kansas surface water quality standards: tables of numeric criteria” shall not apply if the critical low flow is less than 0.003 cubic meter per second (0.1 cubic foot per second) for waters designated as special aquatic life use waters, unless studies conducted or approved by the department show that water present during periods of no flow, or flow below critical low flow, provides important refuges for aquatic life and permits biological recolonization of intermittently flowing segments.

(d) Criteria for designated uses of surface waters. The following criteria shall apply to all classified surface waters for the indicated designated uses:

(1) Agricultural water supply use. The water quality criteria for irrigation and livestock watering specified in table 1a of the “Kansas surface water quality standards: tables of numeric

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criteria” shall not be exceeded outside of mixing zones due to artificial sources of pollution.

(2) Aquatic life support use.

(A) Nutrients. The introduction of plant nutrients into streams, lakes, or wetlands from artificial sources shall be controlled to prevent the accelerated succession or replacement of aquatic biota or the production of undesirable quantities or kinds of aquatic life.

(B) Suspended solids. Suspended solids added to surface waters by artificial sources shall not interfere with the behavior, reproduction, physical habitat, or other factors related to the survival and propagation of aquatic or semiaquatic life or terrestrial wildlife. In the application of this provision, suspended solids associated with discharges of presedimentation sludge from water treatment facilities shall be deemed noninjurious to aquatic and semiaquatic life and terrestrial wildlife if these discharges do not violate the requirements of paragraphs (b)(6) and (8) and paragraph (d)(2)(D).

(C) Temperature.

(i) Heat from artificial sources shall not be added to a surface water in excess of the amount that will raise the temperature of the water beyond the mixing zone more than 3⁰C above natural conditions. Additionally, a discharge to a receiving water shall not lower the temperature of the water beyond the mixing zone more than 3⁰C below natural conditions. The normal daily and seasonal temperature variations occurring within a surface water before the addition of heated or cooled water from artificial sources shall be maintained.

(ii) Temperature criteria applicable to industrial cooling water recycling reservoirs that meet the requirements for classification specified in K.A.R. 28-16-28d shall be established by the

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secretary on a case-by-case basis to protect the public health, safety, or the environment.

(D) Toxic substances.

(i) Conditions of acute toxicity shall not occur in classified surface waters outside of zones of initial dilution, nor shall conditions of chronic toxicity occur in classified surface waters outside of mixing zones.

(ii) Acute criteria for the aquatic life support use specified in tables 1a, 1b, and 1c of the “Kansas surface water quality standards: tables of numeric criteria” shall apply beyond the zone of initial dilution. Chronic criteria for the aquatic life support use specified in tables 1a, 1b, and 1d of the “Kansas surface water quality standards: tables of numeric criteria” shall apply beyond the mixing zone.

(iii) If a discharge contains a toxic substance that lacks any published criteria for the aquatic life support use, or if a discharge contains a mixture of toxic substances capable of additive or synergistic interactions, bioassessment methods and procedures shall be specified by the department to establish whole-effluent toxicity limitations that are consistent with paragraph (d)(2)(D)(i).

(3) Domestic water supply use.

(A) Except as provided in paragraph (d)(3)(B), the criteria listed in table 1a of the “Kansas surface water quality standards: tables of numeric criteria” for domestic water supply use shall not be exceeded at any point of domestic water supply diversion.

(B) In stream segments where background concentrations of naturally occurring substances, including chlorides and sulfates, exceed the domestic water supply criteria listed in

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table 1a of the “Kansas surface water quality standards: tables of numeric criteria,” due to intrusion of mineralized groundwater, the existing water quality shall be maintained, and the newly established numeric criteria for domestic water supply shall be the background concentration. Background concentrations shall be established using the methods outlined in the “Kansas implementation procedures: surface water quality standards,” which is adopted in K.A.R. 28-16-28b.

(C) Any substance derived from an artificial source that, alone or in combination with other synthetic or naturally occurring substances, causes toxic, carcinogenic, teratogenic, or mutagenic effects in humans shall be limited to nonharmful concentrations in surface waters. Unless site-specific water quality conditions warrant the promulgation of more protective criteria under the provisions of subsection (a) of this regulation and K.A.R. 28-16-28f, maximum contaminant levels for toxic, carcinogenic, teratogenic, or mutagenic substances specified in 40 C.F.R. 141.11, 141.13, and 141.61 through 141.66, as in effect on July 1, 2012, shall be deemed nonharmful.

(D) The introduction of plant nutrients into surface waters designated for domestic water supply use shall be controlled to prevent interference with the production of drinking water.

(4) Food procurement use.

(A) Criteria listed in table 1a of the “Kansas surface water quality standards: tables of numeric criteria” for food procurement use shall not be exceeded outside of a mixing zone due to any artificial source of pollution.

(B) Substances that can bioaccumulate in the tissues of edible aquatic or semiaquatic life

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or wildlife through bioconcentration or biomagnification shall be limited in surface waters to concentrations that result in no harm to human consumers of these tissues. For bioaccumulative carcinogens, surface water concentrations corresponding to a cancer risk level of less than 0.000001 (10^{-6}) in human consumers of aquatic or semiaquatic life or wildlife shall be deemed nonharmful by the department and adopted as food procurement criteria. Average rates of tissue consumption and lifetime exposure shall be assumed by the department in the estimation of the cancer risk level.

(5) Groundwater recharge use. In surface waters designated for the groundwater recharge use, water quality shall be such that, at a minimum, degradation of groundwater quality does not occur. Degradation shall include any statistically significant increase in the concentration of any chemical or radiological contaminant or infectious microorganism in groundwater resulting from surface water infiltration or injection.

(6) Industrial water supply use. Surface water quality criteria for industrial water supplies shall be determined by the secretary on a case-by-case basis to protect the public health, safety, or the environment.

(7) Recreational use.

(A) General. The introduction of plant nutrients into surface waters designated for primary or secondary contact recreational use shall be controlled to prevent the development of objectionable concentrations of algae or algal by-products or nuisance growths of submersed, floating, or emergent aquatic vegetation.

(B) Primary contact recreation for classified surface waters other than classified stream

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segments. A single sample maximum or a geometric mean of at least five samples collected during separate 24-hour periods within a 30-day period shall not exceed the criteria in table 1j of the “Kansas surface water quality standards: tables of numeric criteria” beyond the mixing zone.

(C) Secondary contact recreational use for classified surface waters other than classified stream segments. A single sample maximum or a geometric mean of at least five samples collected during separate 24-hour periods within a 30-day period shall not exceed the criteria in table 1j of the “Kansas surface water quality standards: tables of numeric criteria” beyond the mixing zone.

(D) Primary contact recreation for classified stream segments. At least five samples shall be collected during separate 24-hour periods within a 30-day period. A geometric mean analysis of these samples shall not exceed the criteria in table 1i of the “Kansas surface water quality standards: tables of numeric criteria” beyond the mixing zone.

(E) Secondary contact recreation for classified stream segments. The following criteria shall be in effect from January 1 through December 31 of each year:

(i) At least five samples shall be collected during separate 24-hour periods within a 30-day period.

(ii) A geometric mean analysis of the samples specified in paragraph (d)(7)(E)(i) shall not exceed the criteria in table 1i of the “Kansas surface water quality standards: tables of numeric criteria” beyond the mixing zone.

(F) Wastewater disinfection. Wastewater effluent shall be disinfected if the department determines that the discharge of nondisinfected wastewater constitutes an actual or potential

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threat to public health. Situations that constitute an actual or potential threat to public health shall include instances in which there is a reasonable potential for the discharge to exceed the applicable criteria supporting the assigned recreational use designation or if a water body is known or likely to be used for either of the following:

- (i) Primary or secondary contact recreation; or
- (ii) any domestic water supply.

(8) Multiple uses. If a classified stream segment or classified surface water other than a classified stream segment is designated for more than one designated use according to K.A.R. 28-16-28d, the water quality of the classified stream segment or classified surface water other than a classified stream segment shall meet the most stringent of the applicable water quality criteria.

(e) Tables. The numeric criteria for the designated uses of classified surface waters shall be the numeric criteria specified in the department's "Kansas surface water quality standards: tables of numeric criteria," dated ~~March 2, 2021~~ July 1, 2023, which is hereby adopted by reference. (Authorized by K.S.A. 65-171d, ~~65-171m~~, and ~~82a-2010~~ 82a-2002; implementing K.S.A. 65-171d, ~~65-171m~~, ~~82a-2002~~, ~~82a-2003~~, ~~82a-2004~~, and ~~82a-2010~~; effective May 1, 1986; amended, T-87-8, May 1, 1986; amended May 1, 1987; amended Aug. 29, 1994; amended July 30, 1999; amended Nov. 3, 2000; amended Aug. 31, 2001; amended Jan. 3, 2003; amended Oct. 24, 2003; amended Jan. 28, 2005; amended March 20, 2015; amended Feb. 23, 2018; amended March 25, 2022; amended P-_____.)

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28-16-28h. Surface water variance register. The variances approved by the secretary shall be those identified in the department's "Kansas surface water quality standards variance register," dated ~~December 30, 2020~~ October 1, 2023, which is hereby adopted by reference. (Authorized by K.S.A. 65-171d and 65-171m; implementing K.S.A. 65-171d ~~and 65-171m~~; effective Feb. 23, 2018; amended March 25, 2022; amended P-_____.)

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Kansas Administrative Regulations Economic Impact Statement (EIS)

Kansas Department of Health and Environment
Agency

Susan Vogel
Agency Contact

785-296-1291
Contact Phone Number

28-16-28e, 28-16-28h
K.A.R. Number(s)

☒ Permanent ☐ Temporary

Is/Are the proposed rule(s) and regulation(s) mandated by the federal government as a requirement for participating in or implementing a federally subsidized or assisted program?

☒ Yes If yes, continue to fill out the remaining form to be included with the regulation packet submitted in the review process to the Department of Administration and the Attorney General. Budget approval is not required; however, the Division of the Budget will require submission of a copy of the EIS at the end of the review process.

☐ No If no, do the total annual implementation and compliance costs for the proposed rule(s) and regulation(s), calculated from the effective date of the rule(s) and regulation(s), exceed \$1.0 million or more in implementation and compliance costs that are reasonably expected to be incurred by or passed along to businesses, local governmental units and individuals as a result of the proposed rule and regulation over the initial five-year period following adoption of such rule(s) and regulation(s) (as calculated in Section III, F)?

☐ Yes If "Yes," then the agency shall not adopt the rule(s) and regulation(s) until the rule(s) and regulation(s) has been ratified by the Legislature with a bill, unless the proposed rule(s) and regulation(s) are: 1) mandated by the federal government as a requirement for participating in or implementing a federally subsidized or assisted program, as described in K.S.A. 77-416(b)(1)(B), and amendments thereto; 2) temporary rule(s) and regulation(s) adopted pursuant to K.S.A. 77-722, and amendments thereto; or 3) rules and regulations adopted pursuant to K.S.A. 2-3710 (Kansas Agricultural Remediation Board). Continue to fill out the remaining EIS form to be included with the regulation packet in the review process to the Department of Administration and the Attorney General. The submitted EIS will be independently analyzed by the Division of the Budget for approval.

☐ No If no, continue to fill out the remaining form to be included with the regulation packet submitted in the review process to the Department of Administration and the Attorney General. The submitted EIS will be analyzed by the Division of the Budget for approval.

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Section I

Analysis, brief description, and cost and benefit quantification of the proposed rule(s) and regulation(s). If the approach chosen by the Kansas agency to address the policy issue is different from that utilized by agencies of contiguous states or of the federal government, the economic impact statement shall include an explanation of why the Kansas agency's rule and regulation differs.

These proposed regulations meet the requirements under the Clean Water Act under 40 CFR §131.20 requiring states to update their water quality standards “at least once every 3 years.” The previous triennial review was completed in 2021, making 2024 as the year to complete the subsequent triennial review. These regulations are used by the Department of Health and Environment for a multitude of functions under the Division of Environment including, but not limited to, informing and directing permitting decisions, determining impairment of state surface waters, and determining and granting variances in relation to these standards. Revisions made include modifications to documents adopted by reference including the tables of numeric criteria and the ammonia variance register.

The “at least once every 3 years” is in accordance with the federal requirements, as specified above, and matches the practices of the neighboring states of Nebraska, Colorado, and Oklahoma. Missouri is also currently attempting an approach of using the “at least” portion of “at least once every 3 years” by moving forward with a change when it is ready instead of making a broader encompassing package of all the applicable regulations at once.

Section II

Explain whether the proposed rule and regulation is mandated by federal law as a requirement for participating in or implementing a federally subsidized or assisted program and whether the proposed rules and regulations exceed the requirements of applicable federal law.

Reviewing and adopting or modifying, as necessary, these regulation changes are mandated by the federal government under the Clean Water Act at 40 CFR §131.20. Specifically, this review is required “at least once every 3 years.” No deviations are allowed from these federal government requirements and thus are not presented.

Funding through the state’s Water Pollution Control (Section 106) Grant is tied to conducting the Triennial Review.

Section III

Agency analysis specifically addressing the following:

- A. The extent to which the rule(s) and regulation(s) will enhance or restrict business activities and growth;

Revisions to the Kansas Eligibility Determination for Wastewater Lagoon Variance are expected to potentially benefit facilities applying for the variance. The previous Eligibility Determination equation for cost to upgrade and meet the ammonia criteria was based on a 2015 Tetra Tech study which does not account for inflation costs. Due to the significant inflation seen since 2015, this revision is needed for a more accurate calculation of the cost to small municipalities in Kansas to upgrade their facilities.

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Also, the eligibility determination does not represent the dynamic population changes commonly observed in smaller towns across the state. Updating that information to the 2020 U.S. Census, as per associated variance guidance, will benefit small municipalities applying for variances, potentially avoiding impacts on local economy or compliance implications.

- B. The economic effect, including a detailed quantification of implementation and compliance costs, on the specific businesses, sectors, public utility ratepayers, individuals, and local governments that will be affected by the proposed rule(s) and regulation(s) and on the state economy as a whole;

No new monitoring for the regulated community is required under proposed changes to the numeric tables. However, water quality pollutant levels will be lowered, requiring 2 facilities to reduce a pollutant on their discharge to comply with water quality standards. This reduction would require infrastructure improvements to install Air Sparging and Granular Activated Carbon (GAC) Adsorption treatments for volatile organic compounds. The total cost to upgrade the treatment technology at both facilities is not anticipated to exceed \$1,000,000 over a 2-year period.

Modifications to the Kansas Eligibility Determination for Wastewater Lagoon Variance will improve the accuracy of affordability estimates for municipalities. With the proposed updates to the procedure, no additional costs are presented to local governments or their ratepayers discharging from lagoons. Without the option for a variance, facilities would be required to upgrade their facility immediately from lagoons to mechanical plants.

Internal department costs are expected to be negligible from the proposed changes. A minor improvement may be seen by KDHE staff in time needed for determining the affordability to upgrade using the revised form.

- C. Businesses that would be directly affected by the proposed rule(s) and regulation(s);

Two facilities were flagged for new compliance issues with the updated criteria for Trichloroethylene: Koch-Glitsch Groundwater Remediation (Permit #: KS0099805) and Strother Field Groundwater Remediation Project (Permit #: KS0000931). Both facilities operate groundwater remediation projects and will need to upgrade their treatment process to move towards compliance.

- D. Benefits of the proposed rule(s) and regulation(s) compared to the costs;

The benefit of the proposed regulation changes is to improve accuracy of variance candidates, with no additional cost. Additionally, the benefit of the revisions to the numeric tables is to improve human health as it is associated with Kansas surface waters and reduced cancer and disease risks. By adopting these regulation changes, the state will preclude EPA's prerogative to promulgate standards that could be more restrictive and more costly to the state and various entities to implement.

- E. Measures taken by the agency to minimize the cost and impact of the proposed rule(s) and regulation(s) on business and economic development within the State of Kansas, local government, and individuals;

The Kansas Eligibility Determination for Wastewater Lagoon Variances was specifically revised to ensure that municipalities could minimize the cost of compliance with ammonia requirements. The proposed regulation changes, which incorporate updated 2020 census and inflation data, provide a better representation of the population and economic changes commonly seen in smaller towns across the state.

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- F. An estimate of the total annual implementation and compliance costs that are reasonably expected to be incurred by or passed along to businesses, local governments, or individuals. *Note: Do not account for any actual or estimated cost savings that may be realized. Implementation and compliance costs determined shall be those additional costs reasonably expected to be incurred and shall be separately identified for the affected businesses, local governmental units, and individuals.*

Costs to Affected Businesses – \$50,000.00

Costs to Local Governmental Units – \$0.00

Costs to Individuals – \$0.00

Total Annual Costs – \$50,000.00

(sum of above amounts)

Give a detailed statement of the data and methodology used in estimating the above cost estimate.

To determine the cost of new treatment for meeting potential permit limits reflecting the revised criteria, KDHE engineers were consulted on previous experience with the treatment options proposed. For each identified facility, a specific treatment was identified by the engineers including alternatives. From these options, the most costly option for meeting criteria was selected and reflected in the provided cost estimates. The estimates provided by KDHE engineers were based on previous experience with other permitted facilities and include construction and operating fiscal impacts for facilities with the same treatments identified. By providing the most costly option from previous experience, it is anticipated that less costly options to meet criteria will be explored by the permitted dischargers and the overall cost of this regulation change is overestimated. In the event the less-costly options are not selected, then the cost estimate reflects that scenario as a conservative assumption and approach

- ☐ Yes If the total implementation and compliance costs exceed \$1.0 million or more in implementation and compliance costs over the initial five-year period following adoption of such rule(s) and regulation(s) that are reasonably expected to be incurred by or passed along to businesses, local governmental units and individuals as a result of the proposed rule and regulation, did the agency hold a public hearing to find that the estimated costs have been accurately determined and are necessary for achieving legislative intent? If applicable, document when the public hearing was held, those in attendance, and any pertinent information from the hearing.
- ☐ No
- ☒ Not Applicable

The total implementation costs will not exceed \$1.0 million over the initial five-year period following adoption of these proposed regulation changes. Any permit level changes needed because of these regulations would not be in effect until a facility permit is to be renewed and the facility would be given time to implement changes to treatment during the permit period. Permits are typically renewed every 5 years. However, a public hearing was held on August 2, 2023, conducted via Zoom. Notice of the public hearing was published in the *Kansas Register* on July 7, 2023, and posted on the Kansas Surface Water Quality Standards webpage. There were no comments regarding implementation and compliance costs.

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Provide an estimate to any changes in aggregate state revenues and expenditures for the implementation of the proposed rule(s) and regulation(s), for both the current fiscal year and next fiscal year.

No changes in aggregate state revenues and expenditures for the implementation of the proposed regulations are expected for both the current fiscal year and next fiscal year.

Provide an estimate of any immediate or long-range economic impact of the proposed rule(s) and regulation(s) on any individual(s), small employers, and the general public. If no dollar estimate can be given for any individual(s), small employers, and the general public, give specific reasons why no estimate is possible.

No immediate or long-range economic impact is expected for any individual, small employers, and the general public with the implementation of the proposed regulations.

- G. If the proposed rule(s) and regulation(s) increases or decreases revenues of cities, counties or school districts, or imposes functions or responsibilities on cities, counties or school districts that will increase expenditures or fiscal liability, describe how the state agency consulted with the League of Kansas Municipalities, Kansas Association of Counties, and/or the Kansas Association of School Boards.

When the notice of hearing for the regulations is published in the *Kansas Register*, standard agency procedure will be followed and the three organizations will be contacted electronically for comment with attached copies of the regulations, economic impact statement, environmental benefit statement, and published notice of hearing.

- H. Describe how the agency consulted and solicited information from businesses, business associations, local governmental units, state agencies, or institutions and members of the public that may be affected by the proposed rule(s) and regulation(s) or may provide relevant information.

Prior to beginning the formal rulemaking process, a public hearing was held inviting the Kansas Water Office, Kansas Department of Wildlife, Parks, & Tourism, Kansas Professional Engineers, Friends of the Kaw, Kansas Sierra Club, U.S. Environmental Protection Agency, Kansas Livestock Association, all 4 tribes within the state boundaries, and the Kansas Farm Bureau. Additionally, notice of the public hearing was published in the *Kansas Register*, posted on the Kansas Surface Water Quality Standards webpage along with associated documents for review. Notification through the *Kansas Register*, the webpage, and email to the aforementioned list will be repeated, in addition to the other agency and state notice requirements for the public hearing scheduled during this process.

Section IV

Does the Economic Impact Statement involve any environmental rule(s) and regulation(s)?

- ☒ Yes If yes, complete the remainder of Section IV.
☐ No If no, skip the remainder of Section IV.

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- A. Describe the capital and annual costs of compliance with the proposed rule(s) and regulation(s), and the individuals or entities who would bear the costs.

Amendments to K.A.R. 28-16-28e(e) “Kansas Surface Water Quality Standards: Tables of Numeric Criteria” 1a: Two facilities, Koch-Glitsch Groundwater Remediation (Permit #: KS0099805) and Strother Field Groundwater Remediation Project (Permit #: KS0000931), were flagged for new compliance issues with the updated criteria for Trichloroethylene (a volatile organic compound, CAS# 79016). Both facilities operate groundwater remediation projects and will need to upgrade their treatment process to move towards compliance.

Based on the current treatments applied in each facility and based on available information, the treatments listed below would be adequate to treat groundwater contaminated with Trichloroethylene and keep the facilities in compliance.

Koch-Glitsch Groundwater Remediation (Permit #: KS0099805):

Treatment: Air Sparging

Capital cost: \$400,000.00

Annual cost (operation and maintenance): \$30,000.00

Strother Field Groundwater Remediation Project (Permit #: KS0000931):

Treatment: Granular Activated Carbon (GAC) Adsorption

Capital cost: \$430,000.00

Annual cost (operation and maintenance): \$20,000.00

Amendments to K.A.R. 28-16-28h, “Kansas Surface Water Quality Standards Variance Register”:

No additional capital cost is expected for the regulated communities. The cost of implementation will be borne by KDHE and is expected to decrease if not stay the same.

- B. Describe the initial and annual costs of implementing and enforcing the proposed rule(s) and regulation(s), including the estimated amount of paperwork, and the state agencies, other governmental agencies, or other individuals who will bear the costs.

There are no expected initial and annual implementation and enforcement costs. These amendments will not create any additional paperwork for state, other governmental agencies, persons, or entities.

- C. Describe the costs that would likely accrue if the proposed rule(s) and regulation(s) are not adopted, the individuals or entities who will bear the costs and who will be affected by the failure to adopt the rule(s) and regulation(s).

If these regulations are not adopted, then the state is out of compliance with the Clean Water Act triennial review process. Failure to comply with the process once every 3 years results in EPA being required to promulgate standards upon the state. Should EPA promulgate more stringent standards, a likely cost would be accrued by the regulated community and the state through additional staff time consumed addressing the inconsistency between state and federal regulations.

- D. Provide a detailed statement of the data and methodology used in estimating the costs used.

To determine the cost of new treatment for meeting potential permit limits reflecting the revised criteria, KDHE engineers were consulted on previous experience with the treatment options proposed. For each identified facility, a

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specific treatment was identified by the engineers including alternatives. From these options, the most costly option for meeting criteria was selected and reflected in the provided cost estimates. The estimates provided by KDHE engineers were based on previous experience with other permitted facilities and include construction and operating fiscal impacts for facilities with the same treatments identified. By providing the most costly option from previous experience, it is anticipated that less costly options to meet criteria will be explored by the permitted dischargers and the overall cost of regulation change is overestimated. In the event the less-costly options are not selected, then the cost estimate reflects that scenario as a conservative assumption and approach.

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Proposed



Division of Environment
Bureau of Water

ENVIRONMENTAL BENEFIT STATEMENT
AND
ADDITIONAL ECONOMIC IMPACTS FOR ENVIRONMENTAL REGULATIONS

Pursuant to K.S.A. 77-416(d) – (e)

PROPOSED AMENDMENT OF EXISTING WATER QUALITY REGULATIONS:
K.A.R. 28-16-28e, 28-16-28h

October 2023

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I. Environmental Benefit Statement**1) Need for proposed amendments and environmental benefit likely to accrue.****a) Need**

As stated under 40 CFR § 131 “The State shall from time to time, but at least once every 3 years, hold public hearings for the purpose of reviewing applicable water quality standards”. As Kansas operates its surface water quality standards pursuant to the federal Clean Water Act, it must meet this triennial review requirement. Additionally, the need for regular water quality standards updates is integral as continued information and scientific studies guide appropriate standards to be adopted and revised.

b) Environmental benefit

Through triennial water quality standards updates, continued environmental benefit is realized. Ambient water quality is defined and protected in water quality standards through three core components: criteria, designated uses, and antidegradation. This triennial review has criteria revisions to protect the aquatic life in Kansas surface waters and the human health of our population, reflecting improved science since previous rulemakings.

2) When applicable, a summary of the research indicating the level of risk to the public health or the environment being removed or controlled by the proposed rules and regulations or amendment.

Criteria for 92 parameters found on EPA’s 304(a) criteria for human health use protection are being updated through the adoption of revised numeric criteria in this regulation change: 89 parameters for domestic water supply and food procurement (Table 1) and 3 (endrin, 1,2- dichloropropane, 1,2,4-trichlorobenzene) only for food procurement, since our criteria for water supply for these parameters already met the EPA’s 304(a) recommendations. EPA’s 304(a) criteria have associated documents provided at <https://www.epa.gov/wqc/national-recommended-water-quality-criteria-human-health-criteria-table> that account for exposure factors such as body weight, drinking water intake, fish consumption rate, and bioaccumulation factors in addition to identification of the hazard and dose response associated with the parameters. KDHE reviewed EPA’s criteria and associated documentation for these 92 parameters, and they are considered to be more appropriately protective of public health and its environmental exposure while taking a more holistic approach in the criteria’s derivation.

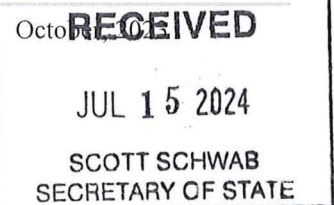


Table 1. Parameters revised for drinking water supply and food procurement in this regulation change.

1,1,1-Trichloroethane	Benzo(a)pyrene	Fluorene
1,1,2,2-Tetrachloroethane	Benzo(b)fluoranthene	gamma-Hexachlorocyclohexane (HCH) [Lindane]
1,1,2-Trichloroethane	Benzo(k)fluoranthene	Heptachlor Epoxide
1,1-Dichloroethylene	beta-Endosulfan	Heptachlor
1,2,4,5-Tetrachlorobenzene	beta-Hexachlorocyclohexane (HCH)	Hexachlorobenzene
	Bis(2-Chloro-1-methylethyl) Ether	Hexachlorobutadiene
1,2-Dichlorobenzene	Bis(2-Chloroethyl) Ether	Hexachlorocyclohexane (HCH) - Technical
1,2-Dichloroethane	Bis(2-Ethylhexyl) Phthalate	Hexachlorocyclopentadiene
1,2-Diphenylhydrazine	Bis(Chloromethyl) Ether	Hexachloroethane
1,3-Dichlorobenzene	Bromoform	Indeno(1,2,3-cd)pyrene
1,3-Dichloropropene	Butylbenzyl Phthalate	Isophorone
1,4-Dichlorobenzene	Carbon Tetrachloride	Methoxychlor
2,4,5-Trichlorophenol	Chlordane	Methyl Bromide
2,4,6-Trichlorophenol	Chlorobenzene	Methylene Chloride
2,4-Dichlorophenol	Chlorodibromomethane	Nitrobenzene
2,4-Dimethylphenol	Chloroform	p,p'-Dichlorodiphenyldichloroethane (DDD)
2,4-Dinitrophenol	Chlorophenoxy Herbicide (2,4,5-TP) [Silvex]	p,p'-Dichlorodiphenyldichloroethylene (DDE)
2,4-Dinitrotoluene	Chlorophenoxy Herbicide (2,4-D)	p,p'-Dichlorodiphenyltrichloroethane (DDT)
2-Chloronaphthalene	Chrysene	Pentachlorobenzene
2-Chlorophenol	Cyanide	Pentachlorophenol
2-Methyl-4,6-Dinitrophenol	Di-n-Butyl Phthalate	Phenol
3,3'-Dichlorobenzidine	Dibenzo(a,h)anthracene	Pyrene
3-Methyl-4-Chlorophenol	Dichlorobromomethane	Tetrachloroethylene
Acenaphthene	Dieldrin	Toluene
Acrolein	Diethyl Phthalate	Toxaphene
Acrylonitrile	Dimethyl Phthalate	Trans-1,2-Dichloroethylene
Aldrin	Endosulfan Sulfate	Trichloroethylene
alpha-Endosulfan	Endrin Aldehyde	Vinyl Chloride
alpha-Hexachlorocyclohexane (HCH)	Ethylbenzene	
Anthracene	Fluoranthene	

The cadmium acute aquatic life use support criterion is also being revised through the adoption of revised numeric criteria in these regulations. EPA's 2016 formula revision, available at <https://www.epa.gov/wqc/aquatic-life-criteria-cadmium>, is more appropriately protective of the aquatic life use present in Kansas surface waters. The level of protection indicated by EPA's formula revision is determined to be more appropriate as its derivation has received further scrutiny, review, and scientific analysis.

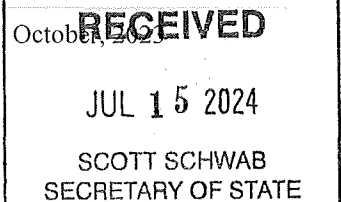
3) If specific contaminants are to be controlled by the proposed regulations or amendment, a description indicating the level at which the contaminants are considered harmful according to current available research.

Updated criteria for 92 parameters (Table 2) reflect the appropriate concentrations for protecting human health with ambient surface water quality conditions based on carcinogenicity of 10^{-6} risk. All criteria were revised considering new scientific findings related to exposure factors (body weight-related drinking water and fish consumption rates), bioaccumulation factors and toxicity factors.

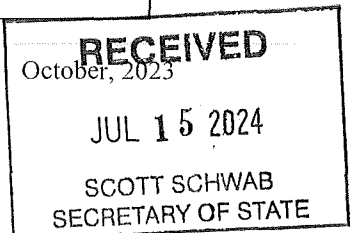
Table 2. Appropriate concentrations to protect food procurement and domestic water supply of 92 parameters updated as part of this rule making.

PARAMETER	FOOD PROCUREMENT (µg/L)	DOMESTIC WATER SUPPLY (µg/L)
cyanide (free)	400	4
bis(2-chloroethyl) ether	2.2	0.030
bis(2-chloroisopropyl) ether	4,000	200
bis(chloromethyl) ether	0.017	0.00015
1,2-dichloroethane	650	9.9
hexachloroethane	0.1	0.1
1,1,2,2-tetrachloroethane	3	0.2
1,1,1-trichloroethane	200,000	10,000
1,1,2-trichloroethane	8.9	0.55
chloroethylene (vinyl chloride)	1.6	0.022
1,1-dichloroethylene	20,000	300
trans-1,2-dichloroethylene	4,000	100
tetrachloroethylene (PCE)	29	10

PARAMETER	FOOD PROCUREMENT (µg/L)	DOMESTIC WATER SUPPLY (µg/L)
trichloroethylene (TCE)	7	0.6
1,2-dichloropropane	31	0.90*
1,3-dichloropropene	12	0.27
bromodichloromethane (dichlorobromomethane)	27	0.95
dibromochloromethane (chlorodibromomethane)	21	0.80
dichloromethane (methylene chloride)	1,000	20
tetrachloromethane (carbon tetrachloride)	5	0.4
tribromomethane (bromoform)	120	7.0
trichloromethane (chloroform)	2,000	60
hexachlorobutadiene	0.01	0.01
hexachlorocyclopentadiene	4	4
ethylbenzene	130	68
nitrobenzene	600	10
chlorobenzene	800	100
1,2-dichlorobenzene (o- dichlorobenzene)	3,000	1,000
1,3-dichlorobenzene (m- dichlorobenzene)	10	7
1,4-dichlorobenzene (p- dichlorobenzene)	900	300
hexachlorobenzene	0.000079	0.000079
pentachlorobenzene	0.1	0.1
1,2,4,5-tetrachlorobenzene	0.03	0.03
1,2,4-trichlorobenzene	0.076	0.071*
2,4-dinitrotoluene	1.7	0.049
toluene	520	57
acrylonitrile	7.0	0.061
benzidine	0.011	0.00014
3,3-dichlorobenzidine	0.15	0.049
1,2-diphenylhydrazine	0.2	0.03
2,4-dimethyl phenol	3,000	100
2,4-dinitrophenol	300	10
phenol	300,000	4,000
2-chlorophenol	800	30
2,4-dichlorophenol	60	10
3-methyl-4-chlorophenol	2,000	500

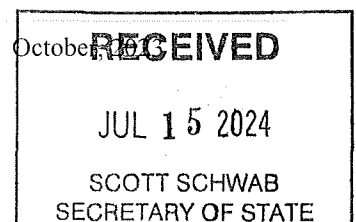


PARAMETER	FOOD PROCUREMENT (µg/L)	DOMESTIC WATER SUPPLY (µg/L)
2,4,5-trichlorophenol	600	300
2,4,6-trichlorophenol	2.8	1.5
butylbenzyl phthalate	0.10	0.10
dibutyl phthalate (di-n-butyl phthalate)	30	20
diethyl phthalate	600	600
dimethyl phthalate	2,000	2,000
bis(2-ethylhexyl) phthalate (DEHP)	0.37	0.32
acenaphthene	90	70
anthracene	400	300
benzo(a)anthracene	0.0013	0.0012
benzo(a)pyrene	0.00013	0.00012
benzo(b)fluoranthene	0.0013	0.0012
benzo(k)fluoranthene	0.013	0.012
2-chloronaphthalene	1,000	800
chrysene	0.13	0.12
dibenzo(a,h)anthracene	0.00013	0.00012
fluoranthene	20	20
fluorene	70	50
indeno(1,2,3-cd)pyrene	0.0013	0.0012
pyrene	30	20
isophorone	1,800	34
acrolein	400	3
aldrin	0.00000077	0.00000077
bromomethane (methyl bromide)	10,000	100
chlordane	0.00032	0.00031
2,4-D	12,000	1,300
4,4-DDD (p,p-DDD)	0.00012	0.00012
4,4-DDE (p,p-DDE)	0.000018	0.000018
DDT, total	0.000030	0.000030
dieldrin	0.0000012	0.0000012
4,6-dinitro-o-cresol	30	2
alpha-endosulfan	30	20
beta-endosulfan	40	20
endosulfan sulfate	40	20
endrin	0.03	0.03*
endrin aldehyde	1	1
heptachlor	0.0000059	0.0000059
heptachlor epoxide	0.000032	0.000032
alpha-HCH (alpha-BHC)	0.00039	0.00036



PARAMETER	FOOD PROCUREMENT (µg/L)	DOMESTIC WATER SUPPLY (µg/L)
beta-HCH (beta-BHC)	0.014	0.0080
gamma-HCH (gamma-BHC, lindane)	4.4	4.2
technical-HCH (technical-BHC)	0.010	0.0066
methoxychlor	0.02	0.02
pentachlorophenol (PCP)	0.04	0.03
toxaphene	0.00071	0.00070
2,4,5-TP (Silvex)	400	100

*Criterion not revised in this rulemaking



II. Additional Economic Impacts for Environmental Regulations

In addition to the Economic Impact Statement prepared for the Kansas Division of the Budget, for all environmental rules and regulations the following descriptions of costs are included:

1) Capital and annual costs of compliance with the proposed amendments and the persons who will bear those costs.

Amendments to K.A.R. 28-16-28e(e) Kansas Surface Water Quality: Tables of Numeric Criteria 1a: Two facilities were flagged for new compliance issues with the updated criteria for Trichloroethylene. Both facilities operate groundwater remediation projects and will need to upgrade their treatment process to move towards compliance. Based on available information, Air Sparging and Granular Activated Carbon (GAC) Adsorption treatments would be adequate treatments for volatile organic compounds, such as trichloroethylene, and the total cost to upgrade the treatment technology at both facilities is not anticipated to exceed \$1,000,000 over two-year period.

Amendments to K.A.R. 28-16-28h, Kansas surface water quality standards variance register: No additional capital cost is expected for the regulated communities. The cost of implementation will be borne by KDHE.

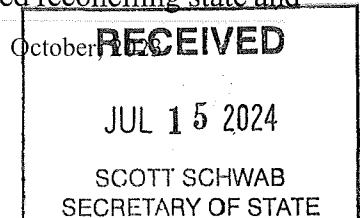
2) Initial and annual costs of implementing and enforcing the proposed amendments, including the estimated amount of paperwork, and the state agencies, other governmental agencies or other persons or entities who will bear the costs.

There are no expected initial and annual implementation and enforcement costs. These amendments will not create any additional paperwork for state, other governmental agencies, persons, or entities.

3) Costs which would likely accrue if the proposed regulations are not adopted, the persons who will bear the costs and those who will be affected by the failure to adopt the regulations.

If these regulations are not adopted, then the state shall be out of compliance with the Clean Water Act regarding the required triennial review process. Failure to comply with the process once every 3 years requires EPA to promulgate standards upon the state. Should EPA promulgate more stringent standards, a likely cost would be accrued by the regulated community and the state through additional staff time consumed reconciling state and

K.A.R. 28-16-28e, 28-16-28h 7



federal regulation inconsistencies.

4) A detailed statement of the data and methodology used in estimating the costs used in the statement.

The method used to determine cost of a new treatment implementation for the impacted facilities was a simple estimation based on past experiences and costs incurred through discussions with KDHE engineers on needed treatment upgrades to comply with any criteria changes that flagged for potential compliance issues.

