**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY**
REGION 4
ATLANTA FEDERAL CENTER
61 FORSYTH STREET
ATLANTA, GEORGIA 30303-8960

NOV 15 2013

Dr. Leonard K. Peters
Secretary
Energy and Environment Cabinet
12th Floor, Capital Plaza Tower
500 Mero Street
Frankfort, Kentucky 40601

Dear Dr. Peters:

The United States Environmental Protection Agency has completed its review of amendments to the Kentucky Water Quality Regulations at Chapter 401 KAR 10:001, 10:026 and 10:031. The proposed amendments to 401 KAR 10:001 and 401 KAR 10:026 were considered by the Administrative Regulation Review Subcommittee (ARRS) on February 11, 2013. These regulations were referred by legislative leadership to the Senate Committee on Natural Resources and Environment and the House Committee on Natural Resources and Environment on March 6, 2013, and became effective April 5, 2013.

The proposed amendments to 401 KAR 10:031 were considered by the ARRS on April 9, 2013. The subcommittee voted to approve the agency amendments regarding selenium pursuant to KRS 13A.320. The proposed amendments at 401 KAR 10:031 were referred by legislative leadership to the Interim Joint Committee on Natural Resources and Environment on May 1, 2013, and became effective May 31, 2013.

The Energy and Environment Cabinet transmitted the revisions by letter dated May 23, 2013. The submittal to the EPA was accompanied by a certification from the General Counsel for the Energy and Environment Cabinet dated May 21, 2013, stating that the revisions were duly adopted pursuant to Kentucky law.

As laid out in the enclosed decision document, titled *Decision Document of the United States Environmental Protection Agency Review of Amendments to Kentucky's Water Quality Regulations at Chapter 401 KAR 10:001, 10:026 and 10:031 Under § 303(c) of the Clean Water Act,* we are approving all provisions that contain the revisions to surface water quality standards as documented in 10:001 and 10:026 and all but one revision in 10:031. These revisions include revisions to definitions; revisions to numeric water quality criteria and to the narrative nutrient criterion; the addition of waters to the Outstanding State Resource Waters and to the Exceptional Waters designated use categories; the addition of water segments as surface water intakes for domestic water supply use; and several editorial changes and corrections.

With regard to the initial acute water quality aquatic life criterion for selenium proposed by the Cabinet, we expressed the concern that the removal of the existing acute selenium criterion would have "the likely consequence of causing impairment to the aquatic habitat where those waterbodies are receiving permitted discharges, particularly from coal mines" (December 19, 2012).

We stated in our comments that the Cabinet consider three options regarding an acute selenium water quality standard. The Cabinet could: (1) leave Kentucky's current acute criterion in place and wait for the release of any revisions to the EPA's selenium criteria guidance; (2) adopt the acute criterion for the EPA's current national § 304(a) recommended guidance; or (3) adopt an alternate criterion based on other scientifically defensible information. In response to these options, the Cabinet determined that it was appropriate for Kentucky to develop a state-specific acute water quality criterion for selenium based on current, scientific information. Kentucky proposed an acute selenium water column number based on the acute toxicity of selenite and selenate. Current scientific consensus is that diet is the primary pathway of selenium exposure and so a criterion based on water-only exposure with no associated dietary exposure is deemed inadequate to protect the designated use. For the reasons further outlined in the enclosed Decision Document (pages 11 - 12) we are disapproving the acute warm water aquatic habitat criterion for selenium because we have determined that lethality is not the appropriate sole endpoint for assuring the protection of aquatic life due to an acute exposure regime.

After careful review, we are approving the fish tissue-based chronic warm water aquatic habitat criterion for selenium because we believe it is consistent with the latest scientific information regarding the toxicology of selenium and is protective of aquatic life. The Cabinet has addressed the questions we raised with regard to the implementation of the tissue-based criteria to our satisfaction in the November 1, 2013, letter from Bruce Scott, Commissioner of the Department for Environmental Protection to Mr. James Giattina, Director of our Water Protection Division. In that letter, Mr. Scott further clarifies that in the event that sufficient fish tissue cannot be obtained, the permit holder will be deemed to be in non-compliance with the proposed KPDES permit for exceeding the chronic trigger level of 5.0 µg/L (letters enclosed).

In addition to our review pursuant to Section 303 of the Clean Water Act, Section 7(a)(2) of the Endangered Species Act requires federal agencies, in consultation with the U.S. Fish and Wildlife Service, to ensure that their actions are not likely to jeopardize the continued existence of federally listed species or result in the destruction or adverse modification of designated critical habitat of such species. The Agency's decision to approve revisions within Kentucky Water Quality Regulations contained in Chapter 401 KAR 10:001, 10:026 and 10:031 is subject to the results of consultation under section 7 of the ESA. The Agency will notify KDEP of the results of the section 7 consultation upon completion of the action.

We would like to commend you and your staff for your continued efforts to protect and enhance Kentucky's waters during this triennial review. We appreciate Kentucky's efforts throughout the development process, including the exhaustive research and analysis by you and your staff to complete this task. If you have questions regarding the EPA's actions, please contact me at (404) 562-8357 or have a member of your staff contact Ms. Larinda Tervelt at (404) 562-9448.

Sincerely,

A. Stanley Meiburg
Acting Regional Administrator

Enclosures

cc: Peter Goodmann

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 4
ATLANTA FEDERAL CENTER
61 FORSYTH STREET
ATLANTA, GEORGIA 30303-8960

OCT 25 2013

Mr. Bruce Scott
Commissioner
Kentucky Department of Environmental Protection
300 Fairoaks Lane
Frankfort, Kentucky 40601

Dear Mr. Scott:

This letter is in response to the Kentucky Division of Water submission of fish tissue-based, chronic, aquatic warm water habitat water quality criteria for selenium. The Environmental Protection Agency understands the Commonwealth intends to develop implementation procedures regarding these criteria. At this time however, The EPA is requesting information concerning how the Commonwealth plans to establish KPDES permit limitations for the chronic fish tissue criteria for dischargers where fish are present in or immediately downstream of the receiving water and also where fish are not present in such waters. This information will assist the EPA in its review of the Commonwealth's water quality criteria submission.

Thank you for continuing to work with the EPA as we clarify how Kentucky proposes to implement the fish tissue-based chronic water quality criteria for selenium. We appreciate Kentucky's efforts throughout the criteria development process, including the exhaustive research and analysis performed by you and your staff to complete this task.

Sincerely,

James D. Giattina
Director
Water Protection Division

ENERGY AND ENVIRONMENT CABINET
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Leonard K. Peters
Secretary

R. Bruce Scott
Commissioner

November 1, 2013

Mr. James D. Giattina, Director
Water Protection Division
U.S. Environmental Protection Agency Region 4
Atlanta Federal Center
61 Forsyth Street
Atlanta, Georgia 30303-8960

Dear Mr. Giattina:

This letter is in response to your letter (attached) dated October 25, 2013 requesting information concerning how the Commonwealth intends to establish Kentucky Pollutant Discharge Elimination System (KPDES) permit limits for the proposed Kentucky-specific fish tissue chronic water quality criteria for selenium. Specifically, EPA has requested:

> *"... information concerning how the Commonwealth plans to establish KPDES permit limitations for the chronic fish tissue criteria for dischargers where fish are present in or immediately downstream of the receiving water and also where fish are not present in such waters."*

Prior to responding specifically to EPA's inquiry, some clarification is necessary. First, it must be noted that this letter of response represents Kentucky's stated intentions for implementation of the revised proposed chronic water quality criteria for selenium. While certainly linked, establishment and review of proposed water quality criteria and implementation of water quality criteria are done pursuant to different authorities and review procedures under the Clean Water Act (CWA).

As such, as this agency has previously stated in response to public comment and to EPA, implementation of Kentucky's proposed chronic water quality criteria for selenium is subject to additional processes for review and comment consistent with CWA § 402 and the associated implementing regulations. These processes include an additional review by EPA of proposed Kentucky CWA § 402 permitting actions, and provides additional opportunity for review and comment by affected permit holders and by the public. With this understanding, and the understanding that implementation procedures are still in development, the agency provides the following response to EPA's October 25, 2013 letter.

KRS 224.10-100 authorizes the agency to issue, continue, revoke, modify, suspend or deny permits to discharge to the waters of the Commonwealth pursuant to conditions the agency may prescribe. The purpose of Kentucky's water quality standards at 401 KAR 10:026 through 401 KAR 10:031 is to safeguard Kentucky's surface waters for their designated uses, to prevent new pollution of those waters, and to abate existing pollution; see 401 KAR 10:029 Section 1(1). The CWA § 303(c) requires that States periodically review their water quality standards and, as appropriate, modify or adopt new standards.

Pursuant to these authorities, Kentucky has adopted chronic water quality criteria for selenium of 8.6 µg/g (dry weight) of whole fish tissue or, 19.3 µg/g (dry weight) of fish egg/ovary tissue in 401 KAR 10:031 Section 6, Table 1. In developing the proposed chronic water quality criteria for selenium, the agency determined that the trigger level of 5.0 µg/L is a protective approach. The 5.0 µg/L trigger level is a screening tool that will assure that fish communities, and therefore aquatic life, are protected from potentially harmful selenium bioaccumulation.

Pursuant to 401 KAR 5:065 Section 2 (4), the agency will conduct a reasonable potential analysis for compliance with water quality parameters, including selenium, in accordance with 40 CFR 122.44(d)(1)(ii). The agency has determined that a water column concentration of selenium greater than 5.0 µg/L may result, through dietary uptake, in the accumulation of selenium in fish tissue in excess of 8.6 µg/g (dry weight) of whole fish tissue or, 19.3 µg/g (dry weight) of fish egg/ovary tissue. Where the agency determines that a discharge has reasonable potential to cause or contribute to an in-stream excursion above a Kentucky water quality criteria established at 401 KAR 10:031, the agency has the authority pursuant to 401 KAR 5:065 Section 2 (4) (incorporating 40 CFR 122.44(d)(1)(i)[1]) to impose an effluent requirement in the proposed KPDES permit.

Footnote 11 to the selenium water quality criteria in Table 1 of 401 KAR 10:031 establishes that a selenium concentration greater than five and zero tenths (5.0) µg/L in the water column shall trigger further sampling and analysis of fish tissue, either whole body or fish egg/ovary tissue, to determine compliance with the criteria. Where the agency determines that a discharge has the reasonable potential to exceed a concentration of 5.0 µg/L in the water column, the agency will establish conditions in the proposed KPDES permit to protect against exceeding the proposed chronic water quality criteria for selenium.

Thus, if an applicant's or permittee's effluent demonstrates a reasonable potential to result in a concentration of selenium in the water column greater than 5.0 µg/L, thereby demonstrating a reasonable potential to exceed the chronic fish tissue criteria of 8.6 µg/g or 19.3 µg/g, the proposed KPDES permit shall require discharge monitoring for selenium. If the average effluent selenium concentration exceeds 5.0 µg/L as reported in the Discharge Monitoring Report (DMR) the permit holder will be required to collect and analyze fish tissue for compliance with the chronic fish tissue criteria for selenium. Results of the analysis of fish tissue samples for selenium residue will thereby be used to determine compliance with the proposed KPDES permit. If the selenium residue in whole-body fish tissue sample or egg/ovary tissue exceeds the corresponding fish tissue limit as established in the proposed KPDES permit the permittee will have failed to demonstrate compliance with the proposed KPDES permit. Conversely, if the fish

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[1] *"Limitations must control all pollutants or pollutant parameters . . . which the Director determines are or may be discharged at a level which will cause, have the reasonable potential to cause, or contribute to an excursion above any State water quality standard."*

tissue analysis yields a result that is lower than the proposed fish tissue limit, the permittee will have demonstrated compliance with the permit requirement for selenium.

The agency has developed draft procedures for the collection of fish tissue for the analysis of selenium residue to determine compliance with the proposed KPDES permit. These procedures shall be required in the proposed KPDES permit. The procedures require the collection of fish tissue in successive stream segments in the effluent-receiving stream where the effects of the discharge may be realized, beginning below the outfall(s) that exceeded the effluent screening trigger concentration of 5.0 µg/L and potentially extending downstream to and terminating at the confluence of the next receiving stream. The agency believes that there are sufficient fish in Kentucky's waterways to provide tissue for determining compliance with the proposed chronic water quality criteria for selenium. However, in the event that sufficient fish tissue cannot be obtained, the proposed KPDES permit will state that if adequate fish tissue cannot be obtained to determine permit compliance with the fish-tissue limit the permit holder will be deemed to be in non-compliance with the proposed KPDES permit for exceeding the chronic trigger level as established in the proposed KPDES permit.

As stated previously, the agency has determined that the trigger of 5.0 µg/L selenium concentration threshold is protective of the aquatic habitat against potential harmful dietary bioaccumulation of selenium that would result in chronic toxicity. The agency's authority to establish compliance in a proposed KPDES permit with the water column threshold of 5.0 µg/L for the fish-tissue criteria in lieu of the availability of fish tissue is provided in 401 KAR 5:065 Section 2 (4) and is derived from 40 CFR 122.44(d)(1)(i):

> *"Limitations must control all pollutants or pollutant parameters (either conventional, nonconventional, or toxic pollutants) which the Director determines are or may be discharged at a level which will cause, have the reasonable potential to cause, or contribute to an excursion above any State water quality standard."*

The agency expresses its appreciation to EPA for the opportunity to provide response to EPA's October 25, 2013 letter with regard to the agency's intentions for implementation of the chronic water quality criteria for selenium in KPDES permits. We appreciate EPA's continued efforts to make timely review of and response to the proposed Kentucky water quality standards revision submittal.

If you have questions or need any additional information, please contact me at your convenience via email at Bruce.Scott@ky.gov or by phone at (502) 564-2150.

Sincerely,

R. Bruce Scott
Commissioner

c: Peter Goodmann, DOW
Mary Stephens, OGC

Attachment

**Decision Document of the**
**United States Environmental Protection Agency**
**Review of Amendments to Kentucky's Water Quality Regulations at**
**Chapter 401 KAR 10:001, 10:026 and 10:031**
**Under § 303(c) of the Clean Water Act**

This document summarizes the EPA review of the revisions to the Kentucky Water Quality Standards adopted by the Kentucky Energy and Environment Cabinet. These revisions were adopted as a result of Kentucky's triennial review of water quality standards, as required by Section 303(c) of the Clean Water Act. The Cabinet submitted the water quality standards revisions by letter dated May 23, 2013, from Leonard K. Peters, Secretary, Kentucky Energy and Environment Cabinet, to Dr. A. Stanley Meiburg, Acting Regional Administrator[1], Environmental Protection Agency, Region 4. The EPA received the revisions on May 28, 2013. The submittal to the EPA was accompanied by certification from C. Michael Hines, the General Counsel for the Cabinet, that the water quality standards revisions were duly adopted pursuant to the law of the Commonwealth.

The Energy and Environment Cabinet initiated a triennial review of its water quality standards in August, 2012. The public comment period for the triennial review began on August 15, 2012, ended on October 1, 2012 and a public hearing was held on September 27, 2012. In response to comments received, the Cabinet prepared a Statement of Consideration and amended the administrative regulations. Those documents were filed with the Legislative Research Commission on November 14, 2012. The Cabinet again amended the revisions to include Kentucky-specific warm water aquatic habitat criteria for selenium and submitted them to the Administrative Regulation Review Subcommittee (ARRS) on February 5, 2013. At the ARRS meeting on February 11, 2013, KDOW elected to defer consideration of 401 KAR 10:031 warm water aquatic life criteria for selenium to allow additional public participation. KDOW provided an opportunity for the public to submit written comments by March 1, 2013 and also provided two stakeholder information meetings on February 22 and 26, 2013.

The proposed amendments to 401 KAR 10:001 and 401 KAR 10:026 were considered by the Administrative Regulation Review Subcommittee (ARRS) on February 11, 2013. These regulations were referred by legislative leadership to the Senate Committee on Natural Resources and Environment and the House Committee on Natural Resources and Environment on March 6, 2013. Neither of these two committees met to consider these proposed regulations within 30 days of the referral. Therefore, 401 KAR 10:001 and 401 KAR 10:026 became effective for purposes of state law on April 5, 2013. The proposed amendments to 401 KAR 10:031 were considered by the ARRS on April 9, 2013. The subcommittee voted to approve the agency amendments regarding selenium pursuant to KRS 13A.320. 401 KAR 10:031 were then referred by legislative leadership to the Interim Joint Committee on Natural Resources and Environment on May 1, 2013. The Interim Joint Committee on Natural Resources and Environment did not meet to

[1] May 23, 2013 letter from Leonard K. Peters, was addressed to Dr. A. Stanley Meiburg, Deputy Regional Administrator, which was Dr. Meiburg's title at the time.

consider these proposed regulations within 30 days of the referral. Therefore, 401 KAR 10:031 became effective for purposes of state law on May 31, 2013.

The EPA reviewed the state rulemaking process with respect to concerns about public participation, relative to the proposed revisions for selenium. First, Kentucky held the public hearing on its proposed water quality standards revisions on September 27, 2012 and provided public notice of this hearing on August 15, 2012. The amendments to selenium criteria that were eventually adopted were not proposed at that time; rather the Cabinet had proposed at that time to withdraw the applicable criterion for selenium for acute toxicity.

In addition to the rulemaking process undertaken by the Cabinet, Kentucky's state-level process involving amendments to proposed WQS revisions as a result of the hearing or written comments received provides for consideration of those amendments by legislative committees (KRS 13A.280 and 13A.290). According to Kentucky's Statement of Consideration, notice of the proposed amendments to the selenium criteria was initially provided on February 5, 2013 and the Administrative Regulation Review Subcommittee (ARRS) was scheduled to consider them on February 11, 2013. In response to comments received at that public hearing, the Cabinet elected to defer consideration of these amendments by the ARRS until its next hearing on March 12, 2013. The Cabinet then again deferred consideration of the amendments until the April 9, 2013 hearing. According to the Statement of Consideration, that second deferral occurred on March 8, 2013. In addition to the ARRS review process, Kentucky also provided for two stakeholder meetings (February 22 and 26, 2013) and an opportunity for the public to submit written comments on the amendments (between February 12 and March 1, 2013).

With regard to public meetings, 40 CFR 25.6 requires 30 days notice before a public meeting that a state agency intends to be open to anyone wishing to attend. The Cabinet provided notice of the February 22 and 26, 2013 stakeholder meetings on February 14, 2013 (i.e., eight and twelve days notice), clearly less than 30 days in advance. However, the EPA's water quality standards regulations at 40 CFR 131.20(b) only reference Part 25 with respect to public hearings, not public meetings. Thus, the EPA finds that the notice defect regarding the February 22 and 26, 2013 stakeholder meetings is not grounds for disapproval (i.e., the EPA approves or disapproves revised or new standards based only on whether the standards are consistent with the CWA and the EPA's water quality standards regulation at 40 CFR part 131).

With regard to public hearings, 40 CFR 131.20(b) provides that the proposed water quality standards revision and supporting analyses shall be made available to the public prior to the hearing. While the Cabinet itself did not hold another public hearing following the September 27, 2012 public hearing or the February 5, 2013 announcement of the revised proposed amendments regarding selenium, the EPA has considered the steps that Kentucky did take, including the fact that the state-level process provides for legislative review of proposed revisions to water quality standards. As to the ARRS hearings, the EPA understands that such hearings are open to the public. In its Statement of Consideration, and relative to the February 11, 2013 ARRS hearing, Kentucky stated that it "specifically noted that the public may be heard on the amendments at the subcommittee hearing." (SOC, pp. 20-21). While consideration of the amendments was deferred, the EPA reviewed the minutes of the April 9, 2013 hearing and noted that members of the public provided testimony to the subcommittee concerning the proposed amendments at that hearing.

Further, EPA understands that there is an opportunity for changes to regulations at the ARRS review stage, provided the agency (the Cabinet, in this case) concurs with any such change. Therefore, there was adequate opportunity for members of the public to provide input at a point in the process where changes could be made. Because this legislative review session contained a public hearing, it satisfies the requirement in 40 CFR 131.20(b) for the state to hold a public hearing.

As to notice, 40 CFR 25.5(b) provides for 45 days notice of public hearings. In this case, the initial announcement of the proposed amendments came on February 5, 2013. That announcement was only six days before the February 11, 2013 ARRS hearing. However, because Kentucky twice deferred consideration of the amendments by the subcommittee, the time period between the initial announcement (February 5, 2013) and the eventual ARRS hearing (April 9, 2013) was actually 64 days, well in excess of the 45-day requirement. Although the ARRS hearing was not a Cabinet hearing and although the Cabinet had already completed the part of the rulemaking process preceding legislative review, members of the Cabinet staff were present at the ARRS hearing and as mentioned above, amendments could be made to the criteria at the time of the hearing with consent of both the ARRS and Cabinet. Thus, the April 9, 2013 public hearing was adequately noticed and was a meaningful opportunity for the public to affect the final rule.

Based on the foregoing, the EPA finds that Kentucky complied with public participation requirements at 40 CFR 131.20(b).

The EPA received many stakeholder letters concerning Kentucky's amended water quality standards. The EPA reviewed and carefully considered all of the comments and concerns raised by the public during its decision making process.

401 KAR 10:029 [General provisions] and 401 KAR 10:030 [Antidegradation policy implementation methodology] were not part of the Cabinet's regulatory package submitted for the EPA approval. There were no revisions to 401 KAR 10:029. 401 KAR 10:030 were amended and proposed, but was not made final. The cabinet is deferring this regulation from legislative committee consideration until remaining issues raised by stakeholders are resolved.

Additions to the Commonwealth's water quality standards regulations are shown underlined below, while deletions to the regulations are shown in brackets and stricken. As discussed more fully below, where the EPA has determined that the Kentucky rule revisions are themselves, new or revised water quality standards, the EPA has reviewed and acted on these revisions pursuant to Section 303(c) of the CWA.[2] The EPA is disapproving the acute selenium criterion as outlined on pages 11 and 12 of this document.

[2] EPA has provided FAQs on "What is a New or Revised Water Quality Standard Under CWA 303(c)(3)?" at http://water.epa.gov/scitech/swguidance/standards/cwa303faq.cfm. The link provides detailed information of such analysis.

**Revisions to 401 KAR 10:001, 10:026 and 10:031**

RELATES TO: KRS 146.200-146.360, 146.410-146.535, 146.550-146.570, 146.600-146.619, 146.990, 224.01-010, 224.01-400, 224.16-050, 224.16-070, 224.70-100 – 224.70-140, 224.71-100 – 224.71-145, 224.73-100 – 224.73-120, 40 C.F.R. 136 [,~~EO 2008-507, 2008-531~~]
STATUTORY AUTHORITY: KRS 224.10-100, 224.70-100, 224.70-110
NECESSITY, FUNCTION, AND CONFORMITY: KRS 224.10-100 authorizes the cabinet to promulgate administrative regulations for the prevention, abatement and control of all water pollution.[~~EO 2008-507 and 2008-531, abolish the Environmental and Public Protection Cabinet and establish the new Energy and Environment Cabinet.~~]

The Necessity, Function and Conformity Paragraphs in 401 KAR 10:001, 026 and 031 were revised to delete the citation [EO 2008-507 and 2008-531, abolish the Environmental and Public Protection Cabinet and establish the new Energy and Environment Cabinet] which is an outdated Executive Order and therefore is no longer needed. This revision does not have a substantive effect on the intent or meaning of the EPA-approved water quality standards regulation. The EPA approves these non-substantive changes as being consistent with 40 CFR Part 131 and Section 303(c) of the CWA. The EPA notes, however, that its approval of this non-substantive change does not re-open the EPA's prior approval of the underlying substantive water quality standards.

**Changes within 401 KAR 10:001. Definitions for 401 KAR Chapter 10**

Section 1.(7)(b) 2. was revised to state:

(7) "Best management practices" or "BMPs" means:
(b) For all other purposes:
1. Schedules of activities, prohibitions of practices, maintenance procedures, and other management practices to prevent or reduce the pollution of waters of the commonwealth; and
2. [~~Include~~] Treatment requirements;[,] operating procedures; and [,] practices to control site run-off, pollution of surface water and groundwater from nonpoint sources, spillage or leaks, sludge or waste disposal, or drainage from raw material storage.

Deleting the word "include," changing the comas to semicolons, plus adding the word "and" does not change the meaning of the definition for best management practices. The changes separate the management practices in Section 1.(7)(b)(1) from the specific types of BMPs in Section 1.(7)(b)2. above. These revisions are non-substantive changes to Kentucky's EPA-approved water quality standards and do not change the meaning of Best Management Practices. The EPA approves these non-substantive changes as being consistent with 40 CFR Part 131 and Section 303(c) of the CWA. The EPA notes, however, that its approval of these non-substantive changes does not re-open the EPA's prior approval of the underlying substantive water quality standards.

Section 1. (25) was revised to state:

> "Domestic water supply" or "DWS" means surface waters that with conventional domestic water supply treatment are suitable for human consumption through a public water system as defined in 401 KAR 8:010, culinary purposes, or for use in a food or beverage processing industry; and meet state and federal regulations promulgated pursuant to [~~under~~] the Safe Drinking Water Act, as amended, 42 U.S.C. 300f - 300j - 26.

KDOW's replacement of the word "under" with the words "promulgated pursuant to" gives a clear meaning to this definition that the DWS would be consistent with published state and federal regulations. This revision is a non-substantive change to Kentucky's EPA-approved water quality standards and does not change the meaning of Drinking Water Supply. The EPA approves this non-substantive change as being consistent with 40 CFR Part 131 and Section 303(c) of the CWA. The EPA notes, however, that its approval of these non-substantive changes does not re-open the EPA's prior approval of the underlying substantive water quality standards.

Section 1. (26) was revised to state:

> "Effluent limitations" is defined by [~~at~~] KRS 224.01-010(12).

Replacing the word "at" with the word "by" does not change the meaning of this definition. "By" means according to rules or laws whereas "at" is used to state where something is found.[3] This revision is a non-substantive change to Kentucky's EPA-approved water quality standards and does not change the meaning of effluent limitations. The EPA approves this non-substantive change as being consistent with 40 CFR Part 131 and Section 303(c) of the CWA. The EPA notes, however, that its approval of these non-substantive changes does not re-open the EPA's prior approval of the underlying substantive water quality standards.

Section 1. (30) was revised to state:

> *"Eutrophication" means the enrichment of a surface water with nutrients, nitrogen and phosphorus resulting in adverse effects on water chemistry and the indigenous aquatic community. Resulting adverse effects on water chemistry manifest by daily dissolved oxygen supersaturation followed by low dissolved oxygen concentrations and diurnal increase in pH. Resulting adverse effects on the indigenous aquatic community include:*
>
> *(a) Nuisance algae blooms;*
> *(b) Proliferation of nuisance aquatic plants;*
> *(c) Displacement of diverse fish or macroinvertebrate community by species tolerant of nutrient-enriched environments; or*
> *(d) Fish kills brought on by severe, sudden episodes of plant nutrient enrichment.*
>
> ~~*by the discharge or addition of a nutrient.*~~

[3] Webster's Ninth New Collegiate Dictionary (1986)

The revised definition identifies the factors which the cabinet considers in determining whether a waterbody is impaired by anthropogenic eutrophication. The inclusion of language regarding nitrogen and phosphorus and the explanation of symptoms of eutrophication clarifies Kentucky's intent to protect the designated uses from enhanced eutrophication due to anthropogenic causes. The additional descriptions and restrictions further clarify the definition of eutrophication and is consistent with the definition of eutrophication in the EPA's Monitoring and Assessment Glossary[4], 40 CFR Part 131 and with CWA § 303(c); therefore, the EPA is approving the revised definition.

Section 1. (35) was revised to state:

> "General permit" means a KPDES permit authorizing a category of discharges pursuant to [~~under~~] KRS Chapter 224 within a geographical area, issued pursuant to [~~under~~] 401 KAR5:055.

Replacing the word "under" with the words "pursuant to" does not change the meaning of the definition. "Pursuant to" means according to or as directed by, whereas, "under" means subject to the authority, control, guidance, or instruction of something.[5] This revision is a non-substantive change to Kentucky's EPA-approved water quality standards and does not change the meaning of general permit. The EPA approves this non-substantive change as being consistent with 40 CFR Part 131 and Section 303(c) of the CWA. The EPA notes, however, that its approval of these non-substantive changes does not re-open the EPA's prior approval of the underlying substantive water quality standards.

Section 1. (59) was revised to state:

> "Nonpoint" means a [~~any~~] source of pollutants not defined by a point source.

Replacing the word "any" with "a" does not change the meaning of the definition. "A" is used before nouns and noun phrases that denote a single but unspecified thing, whereas, "any" means an unmeasured or unlimited amount, number or extent.[6] This revision is a non-substantive change to Kentucky's EPA-approved water quality standards and does not change the meaning of nonpoint. The EPA approves this non-substantive change as being consistent with 40 CFR Part 131 and Section 303(c) of the CWA. The EPA notes, however, that its approval of these non-substantive changes does not re-open the EPA's prior approval of the underlying substantive water quality standards.

Section 1. (66) was revised to state:

> "POTW" means publicly-owned treatment works as defined by [~~in~~] KRS 224.01-010.

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[4] http://water.epa.gov/type/rsl/monitoring/appenda.cfm
[5] http://www.merriam-webster.com/dictionary/
[6] http://www.thefreedictionary.com/

Replacing the word "in" with "by" does not change the meaning of the definition. "By" means according to rules or laws, whereas, "in" is used as a function word to indicate inclusion, location, or position within limits.[3] This revision is a non-substantive change to Kentucky's EPA-approved water quality standards and does not change the meaning of POTW. The EPA approves this non-substantive change as being consistent with 40 CFR Part 131 and Section 303(c) of the CWA. The EPA notes, however, that its approval of these non-substantive changes does not re-open the EPA's prior approval of the underlying substantive water quality standards.

Section 1. (75) was revised to state:

> "Seven-Q-ten" or "$7Q_{10}$" means that minimum average flow that [~~which~~] occurs for seven (7) consecutive days with a recurrence interval of ten (10) years.

Replacing the word "which" with the word "that" does not change the meaning of the definition. The usage of "which" and "that" overlaps; therefore, this change is irrelevant to the overall meaning of the definition. This revision is a non-substantive change to Kentucky's EPA-approved water quality standards and does not change the meaning of "Seven-Q-ten" or "$7Q_{10}$". The EPA approves this non-substantive change as being consistent with 40 CFR Part 131 and Section 303(c) of the CWA. The EPA notes, however, that its approval of these non-substantive changes does not re-open the EPA's prior approval of the underlying substantive water quality standards.

**Changes within 401 KAR 10:026. Designation of uses of surface waters.**

Section 3.(3)(g)2. was revised to state:

> The occurrence of individuals or populations, indices of diversity and well-being and abundance of species of [~~any~~] unique native biota shall be documented;

The deletion of the word "any" does not change the meaning of the subparagraph. This revision is a non-substantive change to Kentucky's EPA-approved water quality standards and does not change the meaning of this particular provision. The EPA approves this non-substantive change as being consistent with 40 CFR Part 131 and Section 303(c) of the CWA. The EPA notes, however, that its approval of these non-substantive changes does not re-open the EPA's prior approval of the underlying substantive water quality standards.

Section 5.(1) was revised to state:

> Listed in the tables in this administrative regulation [~~below~~] are the use designations for specific surface waters of the Commonwealth.

This change is more descriptive of where the use designations are found and does not change the meaning of the subsection. This revision is a non-substantive change to Kentucky's EPA-approved water quality standards and does not change the meaning of this particular provision. The EPA approves these non-substantive changes as being consistent with 40 CFR Part 131 and Section 303(c) of the CWA. The EPA notes, however, that its approval of these non-substantive

changes does not re-open the EPA's prior approval of the underlying substantive water quality standards.

Section 5(2)(b) Table B: Surface Water Intakes for Domestic Water Supply Use was revised as described below:

The Commonwealth deleted 15 drinking water supply systems from Table B. These systems no longer exist due to small suppliers either merging together or being replaced by a new Domestic Water Supply (DWS) company. These systems are listed in Attachment A. All waters in Kentucky are designated for domestic water supply in accordance with 401 KAR 10:026 Section 5 [Surface water use designations]. 401 KAR 10:031[Surface water standards] Section 5 [Domestic Water Supply Use] states that the maximum allowable in-stream concentrations for specific substances, [are] to be applicable at the point of withdrawal. The water impacted by deletion of these systems from the list of active DWS remains designated as domestic water supply and the requirements of 401 KAR10:031 are applicable. Therefore, the deletion of 15 drinking water supply systems from Table B does not change the designated use of those water body segments or the applicable criteria. The EPA finds the deletion of 15 drinking water supply systems consistent with 40 CFR Part 131 and the CWA and approves them pursuant to Section 303(c) of the Act.

The Commonwealth also added 13 new surface water intakes for domestic water supply use to Table B; these systems are listed in Attachment B. Because these intakes are in water previously designated for domestic water supply, this revision does not involve changes in designated uses; the magnitude, frequency or duration of water quality criteria; or antidegradation provisions and does not change the meaning of that particular provision. Therefore, the EPA finds the addition of 13 new surface water intakes for domestic water supply use consistent with 40 CFR Part 131 and the CWA and approves them pursuant to Section 303(c) of the Act.

The description of numerous stream segments with drinking water supply systems reflect new information, particularly the edits of mile points as a result of the latest edition of the 1:24,000-scale National Hydrography Dataset (NHD). Some drinking water systems also have waterbody name corrections. These are listed in Attachment C. These revisions do not have a substantive effect on the intent or meaning of the water quality standards regulation. The EPA approves these non-substantive changes as being consistent with 40 CFR Part 131 and Section 303(c) of the CWA. The EPA notes, however, that its approval of these non-substantive changes does not re-open the EPA's prior approval of the underlying substantive water quality standards.

Section 5(3) Table C: Surface Water Use Designations.

Eleven (11) water body segments with the use designations: Warm Water Aquatic Habitat or Cold Water Aquatic Habitat, Primary Contact Recreation, Secondary Contact Recreation and Outstanding State Resource Water were added to Table C (Attachment D).

Twenty-seven (27) additional Outstanding State Resource Waters (OSRW) was designated based on the most recent scientific information (Attachment E). Sixteen of the 27 are eligible as OSRWs because of excellent biological communities that qualify them as exceptional waters as

required by 401 KAR 10:030. The other 11 are designated as OSRWs because they contain federally threatened or endangered species. The OSRW designation provides additional protection to the biological community through more stringent dissolved oxygen (DO) criteria.

Based on a review of the state submittal for purposes of reclassification of these waters, the EPA finds that the revisions retain all aquatic life uses and supporting water quality criteria of the Commonwealth's OSRW designation. Therefore, since the water quality criteria and uses of the Commonwealth's OSRW designation provide for protection of the CWA Section 101(a)(2) uses (fishable/swimmable), this revision is consistent with the goals of Section 101(a) of the CWA and the implementing regulations at 40 CFR Part 131. In accordance with Section 303(c) of the CWA and 40 CFR Part 131, the EPA is approving these revisions. In accordance with 40 CFR 131.21(c), the revised State waterbodies' classifications are now considered effective for CWA purposes.

Numerous surface water descriptions of stream segments reflect new information, particularly the edits of mile points as a result of the latest edition of the 1:24,000-scale National Hydrography Dataset. Some surface waters also have waterbody name corrections. These are listed in Attachment F. These revisions do not have a substantive effect on the intent or meaning of the EPA-approved water quality standards regulation. The EPA approves these non-substantive changes as being consistent with 40 CFR Part 131 and Section 303(c) of the CWA. The EPA notes, however, that its approval of these non-substantive changes does not re-open the EPA's prior approval of the underlying substantive water quality standards.

**Changes to 401 KAR 10:031. Surface water standards.**

Section 1.

> Nutrients Criterion. [~~Nutrient~~.] Nutrients shall not be elevated in a surface water to a level that results in a eutrophication problem. [~~Limits. In lakes and reservoirs and their tributaries, and other surface waters where eutrophication problems may exist, nitrogen, phosphorus, carbon, and contributing trace element discharges shall be limited in accordance with:~~
> ~~(1) The scope of the problem;~~
> ~~(2) The geography of the affected area; and~~
> (3) ~~Relative contributions from existing and proposed sources~~.]

The revision to the nutrients criterion removes the language that specifically limits nitrogen, phosphorus, carbon and trace elements according to scope, geography and sources. The revised narrative criterion along with the supporting revised definition of eutrophication (discussed earlier at 401 KAR 10:001(30)) clarifies the Cabinet's approach to protection of the designated use from anthropogenic enhanced eutrophication. Together the revised narrative criterion and the revised definition of eutrophication clarify the Commonwealth's approach to the protection of the designated use from eutrophication due to anthropogenic causes and are adequate to ensure that the criterion is protective of the designated use. Also, this revised narrative nutrient criterion includes language that precludes elevation of nutrients such that the nutrients result in a problematic eutrophic condition. The EPA finds the revised narrative nutrient criterion consistent with 40 CFR Part 131 and approves this provision pursuant to Section 303(c) of the Act.

Section 4(1)(d)3.

> A successful demonstration concerning thermal discharge limits carried out pursuant to [~~under~~] Section 316(a) of the Clean Water Act (33 U.S. Code Sec. 1326.) shall constitute compliance with the temperature requirements of this subsection.

Replacing the word "under" with the words "pursuant to" does not change the meaning of this provision. "Pursuant to" means: in carrying out, in conformity with, or according to: whereas "under" means: subject to the authority, control, guidance or instruction of.[7] This revision is a non-substantive change to Kentucky's EPA-approved water quality standards and does not change the meaning of this particular provision. The EPA approves this non-substantive change as being consistent with 40 CFR Part 131 and Section 303(c) of the CWA. The EPA notes, however, that its approval of these non-substantive changes does not re-open the EPA's prior approval of the underlying substantive water quality standards.

Section 6(1) Table 1

The following water quality criteria for acrolein and phenol pollutants were amended to reflect the current National Recommended Water Quality Criteria for the protection of aquatic life and human health in surface water[8]. These criteria are published pursuant to Section 304(a) of the Clean Water Act (CWA) and provide guidance for states and tribes to use in adopting water quality standards.

| Pollutant | CAS Number | Water Quality Criteria µg/L | | | |
|---|---|---|---|---|---|
| | | Human Health: | | Warm Water Aquatic Habitat: | |
| | | DWS | Fish | Acute | Chronic |
| Acrolein | 107028 | 190 | 6 [~~290~~] | 3 [–] | 3 [-] |
| Phenol | 108952 | 21,000 | 860,000 [~~1,700,000~~] | - | - |

These amended water quality criteria are consistent with 40 CFR Part 131 and the CWA and are approved by the EPA pursuant to Section 303(c) of the Act.

The Commonwealth amended the warm water aquatic life criteria for selenium. KDOW developed state-specific water quality criteria as shown below.

| Pollutant | CAS Number | Water Quality Criteria µg/L | | | |
|---|---|---|---|---|---|
| | | Human Health: | | Warm Water Aquatic Habitat: | |
| | | DWS | Fish | Acute | Chronic |
| Selenium | 7782492 | 170 | 4,200 | 258[9] [~~20~~] | 8.6[10, 11] 19.2[12] [~~5.0~~] |

[7] Webster's Ninth New Collegiate Dictionary
[8] http://water.epa.gov/scitech/swguidance/standards/criteria/current/index.cfm

[9]If the concentration of sulfate is less than forty-four (44) mg/L, the alternate acute water quality standard for selenium may be obtained by calculating the Criterion Maximum Concentration (CMC) using the concentrations of selenite as selenate as follows:

> CMC = 1/[f1/CMC1) + (f2/CMC2)], where CMC1 is 258 µg/L for selenite and CMC2 is $e^{(0.5812[\ln(\text{sulfate}) + 3.357)}$ µg/L for selenate, and f1 is the fraction of total selenium that is selenite and f2 is the fraction of total selenium that is selenate.

[10]This value is the concentration in µ/g (dry weight) of whole fish tissue.

[11]A concentration of five and zero tenths (5.0) µg/L or greater selenium in the water column shall trigger further sampling and analysis of whole-body fish tissue or alternately of fish egg/ovary tissue.

[12]This value is the concentration in µg/L (dry weight) of fish egg/ovary tissue.

**Acute Criterion**

The Cabinet has updated its acute warm water aquatic habitat criterion for selenium. As stated in the cover letter to this action, the EPA is disapproving the acute selenium criterion because it does not provide adequate protection of aquatic life. Kentucky based its proposed acute criterion on a 2004 draft EPA acute criterion, which is an equation based on the acute toxicity of selenite and selenate. However, the EPA did not finalize this draft 2004 acute criterion and the proposal alerted the public that this criterion may change based on further research and scientific review.

Since the publication of the 2004 draft criterion, a review panel of experts convened in 2009 (SETAC Pellston Workshop) to examine the science and to develop consensus on a path forward for the assessment of selenium in the aquatic environment. The resulting product from the workshop was a summary report published in 2009 and a book published in 2010.[9] The EPA considers this reference to accurately represent a broad consensus of the current state of the science on the subject.

The panel concluded that diet is the primary pathway of selenium exposure for both invertebrates and vertebrates. This finding is consistent with other findings where numerous experts in selenium ecotoxicology have demonstrated that dietary exposure (i.e., eating contaminated prey) is the main pathway by which effects occur in fish and wildlife (e.g., Chapman et al. 2010; Lemly 1997; Lemly and Skorupa 2007; Luoma and Rainbow 2005). Like other persistent, bioaccumulative chemicals, the water concentration of selenium must be maintained at a low level in order to minimize effects in fish and wildlife (e.g., USEPA 1995; USEPA 2000). The panel also concluded that traditional methods for predicting toxicity on the basis of exposure to dissolved concentrations do not work for selenium because the behavior and toxicity of selenium in aquatic systems are highly dependent upon site-specific factors, including food web structure

[9] Chapman, P.M., W.J. Adams, M.L. Brooks, C.G. Delos, S.N. Luoma, W.A. Maher, H.M. Ohlendorf, T.S. Presser, and D.P. Shaw (editors). 2010. *Ecological Assessment of Selenium in the Aquatic Environment*. Society of Environmental Toxicology and Chemistry, Pensacola, Florida.

and hydrology. The panel further noted that acute toxicity has rarely been reported in the aquatic environment.

Acute criteria are intended to complement the protection provided by chronic criteria for short-term (or intermittent) exposures for acutely toxic chemicals. Developing acute criteria from direct toxicity studies is an effective strategy when the typical concern is lethality from direct short-term exposure, and sub-lethal or chronic growth or reproductive effects result from longer term exposure. However, this is not the case for selenium. There is ample scientific evidence to demonstrate that significant bioaccumulation and corresponding adverse effects can result from short-term low-level exposure to selenium in the water column.

Many studies have confirmed the impacts of selenium contamination on aquatic life, specifically reproductive and bioaccumulative effects, even at very low levels (Garrett and Inman 1984 Gillespie and Bauman 1986; Lemly 1985). Because the Kentucky acute criterion subject to this action does not account for dietary exposure from bioaccumulation, the EPA is concerned that an appropriate criterion would not be applied in intermittent exposure situations and thus the contribution of such intermittent exposures to bioaccumulation of selenium in the food chain would not be recognized. The factor increase in selenium concentration is highest near the base of the food chain. Algae can biomagnify selenium concentration in the water by 100-fold or more (Chapman et al. 2010; Schlekat et al. 2007). Invertebrates feeding on algae can further biomagnify selenium (e.g., Conley et al. 2009; Presser and Luoma 2010; Swift 2002). Uptake of selenium by algae and other aquatic plants can be rapid depending on the species and various environmental factors (Maier et al. 1998; Umysová et al. 2009). Maier et al. (1998) demonstrated that a short (< 24 hour) pulse (an aerial application of a selenium fertilizer) of selenium resulted in elevated water concentrations of as much as 10.9 µg/L three hours after the pulse. This single application exposure also resulted in approximately three times the selenium concentration in invertebrates as compared to concentrations prior to the application and remained high for one year following the pulse.

On the other hand, depuration of selenium by fish is not rapid. Bertram and Brooks (1986) measured a depuration coefficient for adult fathead minnows to be 0.02/day (base e). This translates, via the reciprocal of the depuration coefficient, to a characteristic time of 50 days for depuration. Because of this long depuration time, even among small-sized fish, the EPA believes that brief intermittent exposures, even though they may be perceived as insignificant when considered one at a time in isolation, need to be accounted for to assure protection. The acute criterion that Kentucky has adopted does not provide such protection because it is based on water-only exposure, with no associated dietary exposure. Therefore, the acute criterion adopted by the Commonwealth is not scientifically defensible or consistent with 40 CFR 131 and the CWA.

Pursuant to 40 CFR 131.21(e), with this disapproval, Kentucky's previous acute water quality criterion (20 ug/L) remains in effect for all Clean Water Act purposes. To resolve the disapproval, Kentucky must develop and adopt an acute criterion that protects for short term exposure and is derived from the approved chronic fish tissue-based criteria. The EPA is willing to work with the Commonwealth in the development of such a criterion.

## Chronic Criteria

The chronic water quality criteria for warm water aquatic habitat for selenium (derived based on species native or naturalized to Kentucky waters, or species that serve as appropriate surrogates to native fish species) is 8.6 µg/g dry weight of whole fish tissue or 19.2 µg/g dry weight of fish egg/ovary tissue. The approach Kentucky used to derive these numbers is similar to the conventional Sensitivity Distribution Approach used by the EPA. Kentucky will use a value of 5.0 µg/l to trigger a fish tissue or egg/ovary tissue analysis. The chronic criterion is the concentration of selenium in fish or egg/ovary tissue. If a species-composite fish tissue or egg/ovary tissue has a selenium concentration that exceeds the tissue criterion, the site is considered in non-attainment of the water quality standard.

Kentucky's derivation of criteria is described in detail in *Update to Kentucky Water Quality Standards for Protection of Aquatic Life: Acute Selenium Criterion and Tissue-Based Selenium Chronic Criteria*, dated February 2013. Kentucky considered and evaluated the studies the EPA used in 2004 in its draft selenium criteria document and additional data that has become available since that time, including studies that the EPA listed in 2008 as meriting consideration. In the derivation of its fish tissue criteria, the Commonwealth considered the available toxicity data for 10 species that either reside in the state or are surrogates for related resident species. The species considered are bluegill, largemouth bass, brook trout, brown trout, rainbow trout, northern pike, white sucker, white sturgeon, western mosquitofish, and fathead minnow. Overall, Kentucky's interpretations of these studies do not differ significantly from the interpretations either of the EPA or of the 2009-2010 expert panel of the Society of Environmental Toxicology and Chemistry. The conversions between egg/ovary and whole-body concentrations are likewise based on data that the EPA believes are sound. Furthermore, the whole-body criterion and the egg criterion were derived using species sensitivity distribution concepts similar to the EPA's 1985 guidance approach. For these reasons, the EPA believes that the values of both of these criteria fall within ranges that can reasonably be defended as protecting aquatic life against the harmful effects of selenium and are expected to be protective of the designated use.

Based on the above analysis, the Kentucky amended chronic water quality criteria for warm water aquatic habitat for selenium are scientifically defensible and are protective of the designated use of warm water aquatic habitat in the Commonwealth's water bodies. The criteria are therefore consistent with 40 C.F.R. 131 and the CWA and are approved.

The scientific defensibility of the criteria stems, in part, from the use of fish data for species found in Kentucky waters that could be expected to accumulate selenium. The fish data were sufficient and relevant to support the criteria, and the derivation was consistent with the EPA's own analysis. Kentucky also affirms in their November 1, 2013 letter, that in the event that sufficient fish tissue cannot be obtained the permit holder will be deemed to be in non-compliance with the proposed KPDES permit for exceeding the chronic trigger level of 5.0 µg/L.

Current findings show the primary mode of chronic toxicity effects on fishes is based on dietary uptake rather than aqueous concentration. Kentucky's whole body or egg/ovary criteria are based on fish tissue concentration of total selenium and given that dietary exposure is the primary route for chronic toxicity effects, Kentucky proposed a water column concentration threshold of 5.0

µg/L to provide additional assurance that tissue monitoring is triggered prior to potential bioaccumulation levels that may result in chronic effects on fish populations and exceedence of the standard. The concept of a tiered assessment starting with the comparison of ambient water concentrations to a trigger value for indicating the potential for bioaccumulation of selenium in Kentucky's waters is supported by the EPA Science Panel Review Paper on selenium following a coal ash spill at the Tennessee Valley Authority Kingston Fossil Plant. However, the 5.0 ug/L trigger value is not a new or revised water quality standard. Therefore, the EPA is not acting under CWA § 303(c) authorities on the trigger value. The EPA recognizes the advantages of expressing the chronic aquatic life criteria as a tissue-based concentration, yet also understands the need for appropriate translation into a water column value for purposes such as meeting the permitting requirements of Clean Water Act Section 402 and the implementing regulations at 40 CFR 122.44. In fact, the EPA intends to recommend a water column translation as part of its forthcoming CWA 304(a) criteria. At that time the EPA will urge states to modify their water quality standards to include a water column translation for selenium as they undertake their respective triennial reviews in accordance with the Clean Water Act.

Section 8. Outstanding State Resource Waters.

(1)(a)1. Waters designated pursuant to [~~under~~] the Kentucky Wild River Act, KRS 146.200-146.360;

(1)(a)2. Waters designated pursuant to [~~under~~] the Federal Wild and Scenic Rivers Act, 16 U.S.C. 1271 – 1287

Replacing the word "under" with the words "pursuant to" does not change the meaning of this provision. "Pursuant to" means: in carrying out, in conformity with, or according to: whereas "under" means: subject to the authority, control, guidance or instruction of.[10] These revisions are non-substantive changes to Kentucky's EPA-approved water quality standards and do not change the meaning of the provisions. The EPA approves these non-substantive changes as being consistent with 40 CFR Part 131 and Section 303(c) of the CWA. The EPA notes, however, that its approval of these non-substantive changes does not re-open the EPA's prior approval of the underlying substantive water quality standards.

Section 8(1)(a)3.

> [~~Waters identified under the Kentucky Nature Preserves Act, KRS 146.410 – 146.530, which are contained within a formally dedicated nature preserve or are published in the registry of natural areas in accordance with 400 KAR 2:080 and concurred upon by the cabinet; and~~

The Commonwealth deleted a provision that included waters identified as a formally dedicated nature preserve or published in the registry of natural areas as an automatic inclusion for waters to be listed as OSRWs. The selection criteria for waters to be included as Kentucky Outstanding State Resource Waters include several aspects that are usually associated with "high" water quality levels (i.e., water quality levels that are better than necessary for CWA § 101(a)(2) uses),

[10] Webster's Ninth New Collegiate Dictionary

such as waters designated as Kentucky Wild River, or Federal Wild and Scenic Rivers. However, dedicated state nature preserves are established solely to protect and preserve rare species and the natural environment and may have no direct link to high levels of water quality. A legally dedicated natural preserve does not necessarily have high quality waters, but indeed may have waters that have been listed as impaired or only partially supporting water quality standards under the U.S. Clean Water Act. The decision to remove from automatic inclusion aquatic resources within the boundaries of state nature preserves is based on the need to ensure that automatic inclusion as an OSRW is founded on demonstrated water quality characteristics. Title 401 KAR 10:031 Section 8(1)(b) provides the Cabinet the authority to ensure waterbodies designated as OSRWs, including those waterbodies within the boundaries of state nature preserves, have the qualities specified in Section 8(1)(b). There is no EPA requirement that a state include in its standards regulation a provision for waters to be automatically included as an OSRW. It is at the discretion of the Commonwealth to do so.

Elimination of a legally dedicated natural preserve as a criterion for automatic inclusion for a designation of Outstanding State Resource Water will ensure that all waterbodies meeting the automatic inclusion test under 401 KAR 13:031 have exceptional water quality and/or habitat. This revision is a clarification of meaning as to what is/is not included in an automatic inclusion as an OSRW designation and does not have a substantive effect on the intent or meaning of the EPA-approved water quality standards regulation.

Section 8(1)(a)4.

> ~~[4.]~~ Waters that support federally recognized endangered or threatened species pursuant to [~~under~~] the Endangered Species Act of 1973, as amended, 16 U.S.C. 1531 – 1544.

The number "4" was deleted and will become number "3" with the deletion of the above automatic inclusion of legally dedicated natural preserves as OSRWs.

Replacing the word "under" with the words "pursuant to" does not change the meaning of this provision. "Pursuant to" means: in carrying out, in conformity with, or according to: whereas "under" means: subject to the authority, control, guidance or instruction of.[11] These revisions are non-substantive changes to Kentucky's EPA-approved water quality standards and do not change the meaning of the provision. The EPA approves these non-substantive changes as being consistent with 40 CFR Part 131 and Section 303(c) of the CWA. The EPA notes, however, that its approval of these non-substantive changes does not re-open the EPA's prior approval of the underlying substantive water quality standards.

Section 8(1)(b)1.

> 1. The surface waters flow through or are bounded by state or federal forest land, or are of exceptional aesthetic or ecological value or are within the boundaries of national, state, or local government parks or are a part of a unique geological, natural, or historical area recognized by state or federal designation;

[11] Webster's Ninth New Collegiate Dictionary

Adding the word "natural" does not change the meaning of the provision but further defines the waters which shall be considered for inclusion in the category of OSRW. This addition of the word natural is a non-substantive change to Kentucky's EPA-approved water quality standards and does not change the meaning of the provision. It is consistent with 40 CFR Part 131 and the CWA and is approved by the EPA pursuant to Section 303(c) of the Act.

Section 8(3) Determination of designation.

> (a) A person may present a proposal to designate certain waters pursuant to [~~under~~] this section.

Replacing the word "under" with the words "pursuant to" does not change the meaning of this provision. "Pursuant to" means: in carrying out, in conformity with, or according to: whereas "under" means: subject to the authority, control, guidance or instruction of.[12] This change is consistent with 40 CFR Part 131 and the CWA and is approved by the EPA pursuant to Section 303(c) of the Act. The EPA notes, however, that its approval of these non-substantive changes does not re-open the EPA's prior approval of the underlying substantive water quality standards.

> (b)1. The cabinet shall review the proposal and supporting documentation to determine if [~~whether~~] the proposed waters qualify as outstanding state resource waters within the criteria established by this administrative regulation.

'If' and 'whether' are more or less interchangeable in sentences and replacing the word "if" with the word "whether" does not change the meaning of this provision. This revision is a non-substantive change to Kentucky's EPA-approved water quality standards and does not change the meaning of this provision. The EPA approves this non-substantive change as being consistent with 40 CFR Part 131 and Section 303(c) of the CWA. The EPA notes, however, that its approval of these non-substantive changes does not re-open the EPA's prior approval of the underlying substantive water quality standards.

Section 9 Water Quality Criteria for the Main Stem of the Ohio River

> 2(a) Dissolved oxygen. Instream concentrations shall average at least five and zero-tenths (5.0) mg/l per calendar day and shall not be less than four and zero-tenths (4.0) mg/l except during the April 15 – June 15 spawning season when a minimum of five and one-tenth (5.1) mg/l shall be maintained.

Adding the word "instream" to this dissolved oxygen criteria clarifies that the dissolved oxygen criteria applies instream and not at the end of pipe. This change is consistent with 40 CFR Part 131.6 and the CWA and is approved by the EPA pursuant to Section 303(c) of the Act.

Section 11. Exceptions to Criteria for Individual Dischargers.

> (1) An exception to criteria may be granted to an individual discharger based on a demonstration by the discharger,[,] that KPDES permit compliance with existing

[12] Webster's Ninth New Collegiate Dictionary

instream criteria cannot be attained because of factors specified in 401 KAR 10:026, Section 2(4)(a) through (f).

The deleted extra comma has no change to the meaning of this provision. This revision is a non-substantive change to Kentucky's EPA-approved water quality standards and does not change the meaning of the provision. The EPA approves this non-substantive changes as being consistent with 40 CFR Part 131 and Section 303(c) of the CWA. The EPA notes, however, that its approval of these non-substantive changes does not re-open the EPA's prior approval of the underlying substantive water quality standards.

**Endangered Species Act**

The EPA's action to approve new and revised standards is subject to completion of consultation under Section 7 of the Endangered Species Act as to revisions involving the designation of qualifying water bodies as Outstanding State Resource Waters; the modification of the definition for eutrophication; revision of the narrative nutrient criterion; the revision of the criteria for acrolein, phenol and selenium; and clarification that the dissolved oxygen criterion is an in stream criterion. The EPA has prepared a Biological Evaluation for the EPA's approval of these new and revised water quality standards provisions and this Biological Evaluation has been provided to the U.S. Fish and Wildlife Service for concurrence. The EPA has determined that these approvals are not likely to adversely affect listed species or critical habitat. Also, approval of the revisions to aquatic life criteria, which are equal to or more protective than the EPA's nationally recommended criteria is subject to the results of the national 304(a) consultations under Section 7 of the Endangered Species Act. The EPA will notify Kentucky of the results of Section 7 consultation upon completion of the action.

11/15/2013

Date

A. Stanley Meiburg
Acting Regional Administrator

Attachment A

**DELETED SURFACE WATER INTAKES FOR DOMESTIC WATER SUPPLY USE**

| Name | Description | County |
|---|---|---|
| **BIG SANDY RIVER BASIN** | | |
| Elkhorn City Water Department | Mile 13.7 of Russell fork | Pike |
| Cumberland County Water District | Mile 419.7 of Cumberland River | Cumberland |
| Ky Parks Cumberland Falls | Mile 562.5 of Cumberland River | Whitley |
| **LICKING RIVER BASIN** | | |
| West Liberty Water Company | Mile 228.6 of Licking River | Morgan |
| Flemingsburg Utilities | Mile 131.8 of Licking River | Fleming |
| **KENTUCKY RIVER BASIN** | | |
| Ky Parks Natural Bridge State Park | Mile 0.11 of Mill Creek (Mill Creek Lake) | Powell |
| Blackey Municipal Water Works | Mile 131.0 of North Fork Kentucky River | Letcher |
| **GREEN RIVER BASIN** | | |
| Hidden Valley Springs | Mile 0.4 of Hidden Valley Spring of UT to rock Creek at mile 5.9 | Grayson |
| Columbia Utilities Commission | Mile 42.7 of Russell Creek | Adair |
| Hardinsburg/Us Filter | Tules Creek at mile 1.2 (Rough River Reservoir) | Breckinridge |
| City of Lafayette (Tennessee) | Mile 118.4 of Barren River | Monroe |
| Columbia Utilities Commission | Mile 317.5 of Green River (Green River Reservoir) | Adair |
| **LOWER CUMBERLAND RIVER BASIN** | | |
| Eddyville Municipal Water Works | Mile 1.5 of Knob Creek (Lake Barkley) | Lyon |
| TVA Land Between the Lakes, Wrangler | Mile 1.0 on UT of Lick Creek at mile 1.1 | Trigg |
| **TRADEWATER RIVER BASIN** | | |
| Earlington Water Works | Mile 0.2 of UT to Clear Creek at mile 26.5 (Loch Mary Reservoir) | Hopkins |

**NEW SURFACE WATER INTAKES FOR DOMESTIC WATER SUPPLY USE**

| Name | Description | County |
|---|---|---|
| **LITTLE SANDY RIVER BASIN** | | |
| Rattlesnake Ridge Water District | Mile 57.93 of Little Sandy River (Grayson Lake) | Elliott |
| **UPPER CUMBERLAND RIVER BASIN** | | |
| Laurel County Water Department #2 | Mile 4.9 of Craig Creek (Laurel River Lake) | Laurel |
| Jamestown Municipal Water Works | Mile Point 4.6 of Greasy Creek Branch (Lake Cumberland due to the lowering) | Russell |
| Barbourville Utility Commission | Mile 17.5 of Laurel River (main intake) | Laurel |
| Stanford Water Works | Mile 58.1 Buck Creek | Lincoln |
| **LICKING RIVER BASIN** | | |
| Mt. Sterling Water & Sewer System | Mile 36.5 of Slate Creek (at the plant) | Montgomery |
| **KENTUCKY RIVER BASIN** | | |
| Kentucky American Water Co (Plant C) | Mile 47.8 of Kentucky River | Franklin |
| Knott County Water and Sewer District | Mile 11.6 of Carr Fork Lake | Knott |
| **SALT RIVER BASIN** | | |
| Columbia/Adair Water Commission | Mile 311.7 Green River Lake | Taylor |
| **LOWER CUMBERLAND RIVER BASIN** | | |
| Cadiz Water Co | Mile 3.2 of Little Yellow Creek | Trigg |
| Logan Todd Regional Water Commission | Cumberland River at Clarksville TN | TN |

Attachment C

**DESCRIPTION CHANGES TO SURFACE WATER INTAKES FOR DOMESTIC WATER SUPPLY USE**

| Name | Description | County |
|---|---|---|
| **BIG SANDY RIVER BASIN** | | |
| Louisa Municipal Water Works | Mile 27.35 [~~0.6~~] of Levisa Fork | Lawrence |
| Prestonsburg City Utilities Commission | Mile 84.3 [~~57.5~~] of Levisa Fork | Floyd |
| Pikeville Water Works/US Filter | Mile 117.8 [~~88.2~~] of Levisa Fork | Pike |
| Martin County Water District #1 | Mile 1.35 of Lick Branch (Crum Reservoir) [~~23.8 of Tug Fork~~] | Martin |
| Jenkins Water Works | Mile 23.8 [~~24.1~~] of Elkhorn Creek | Letcher |
| **LITTLE SANDY RIVER BASIN** | | |
| Grayson Utility Commission | Mile 39.03 [~~40.1~~] of Little Sandy River | Carter |
| **TYGARTS CREEK BASIN** | | |
| Olive Hill Water Works | Mile 78.9 [~~81.1~~] of Tygarts Creek | Carter |
| **UPPER CUMBERLAND RIVER BASIN** | | |
| Corbin City Utilities Commission | Mile 21.45 [~~17.3~~] of Laurel River (City Reservoir) | Laurel |
| Mt. Vernon Municipal Water Works | Mile 3.3 of Renfro Creek (Lake Linville) (emergency use only) | Rockcastle |
| Laurel County Water Department #2 | Mile 27.95 [23.9] of Laurel River (Dorthea Dam) (emergency use only) | Laurel |
| Williamsburg Water Works | Mile 589.7 [~~584.15~~] of Cumberland River | Whitley |
| Jamestown Municipal Water Works | Mile 3.75 [~~3.9~~] of Greasy Creek Branch (Lake Cumberland) | Russell |
| Cawood Water District | Mile 10.1 [~~11.0~~] of Martins Fork | Harlan |
| Albany Municipal Water Works Plant B | Mile 3.9 [~~6.7~~] of Indian Creek (Lake Cumberland) | Clinton |
| McCreary County Water District Plant B | Mile 31.3 [~~31.0~~] of South Fork Cumberland River McCreary (Lake Cumberland) | McCreary |
| **LICKING RIVER BASIN** | | |
| Millersburg Municipal Water Works | Mile 78.1 [~~13.3~~] of Hinkston Creek | Bourbon |
| Northern Ky Water Service District Plant A | Mile 4.55 [~~4.8~~] of Licking River | Kenton |
| Mt Sterling Water & Sewer System | [~~Mile 36.1 of~~] Slate Creek at mile 36.1 (Reservoir) | Montgomery |
| Cynthiana Municipal Water Works | Mile 50.4 [~~51.2~~] of South fork Licking River | Harrison |
| Falmouth Water Plant | Mile 52.09 [~~52.7~~] of Licking River | Pendleton |

| | | |
|---|---|---|
| Morehead Utility Plant Board | Mile 170.6 [~~177.7~~] of Licking river | Rowan |
| Western Fleming Water District | Mile 100.5 [~~102.5~~] of Licking River | Nicholas |
| Salyersville Municipal Water Works | Mile 270.3 [~~273.2~~] of Licking river | Magoffin |
| Cynthiana Municipal Water Works | Mile 83.1 [~~84.5~~] of Licking River | Harrison |
| Carlisle Municipal Water Department | Mile 107.8 [~~110.2~~] Licking River | Nicholas |
| West Liberty Water Company | Mile 4.35 [~~3.9~~] of North Fork Licking River (Cave Run Lake) | Rowan |
| Cave Run Water Commission | Mile 195.9 [~~197.4~~] of Licking River (Cave Run Lake) | Menifee |
| **KENTUCKY RIVER BASIN** | | |
| Lancaster Municipal Water Works | Mile 141.62 [~~145.2~~] of Kentucky Rover (Pool #8) | Garrard |
| Frankfort Electric & Water Plant Board | Mile 69.8 [~~71.7~~] of Kentucky River (Pool #4) | Franklin |
| Hazard Water Department | Mile 361.0 [~~104.1~~] of North Fork Kentucky River | Perry |
| Wilmore Utilities System | Mile 114.0 [~~117.2~~] of Kentucky River (Pool #6) | Jessamine |
| Nicholasville Water Works | Mile 154.1 [~~157.9~~] of Kentucky river (Pool #8 | Jessamine |
| Jackson Municipal Water Works | Mile 305.45 [~~47.2~~] of North Fork Kentucky River | Breathitt |
| Kentucky American Water Company Plant A | Mile 167.43 [~~171.5~~] of Kentucky River (Pool #9) | Fayette |
| Kentucky American Water Company | Reservoir #1 (Lake Ellerslie) (Primarily used as emergency backup) | Fayette |
| Lawrenceburg Municipal Water Works | Mile 83.75 [~~86.2~~] of Kentucky River | Anderson |
| Versailles Municipal Water Works | Mile 85.27 [~~87.7~~] of Kentucky River (Pool 5) | Woodford |
| Harrodsburg Municipal Water Works | Mile 117.85 [~~121.0~~] of Kentucky River (Pool 7) | Mercer |
| Stanford Water Works | Mile 5.63 [~~6.0~~] of Neals Creek (Rice Lake) | Lincoln |
| Richmond Utilities Board | Mile 201.3 [~~206.49~~] of Kentucky River (Pool 11) | Madison |
| Whitesburg Municipal Water Works/Veolia Water | Mile 406.3 [~~150.9~~] of North Fork Kentucky River | Letcher |
| Georgetown Municipal Water & Sewer | Mile 50.9 [~~33.5~~] of North Elkhorn Creek | Scott |
| Beattyville Water Works | Mile 262.8 [~~1.3~~] of North Fork Kentucky River (Pool #14) | Lee |
| Winchester Municipal Utilities | Mile 176.5 [~~1180.8~~] of Kentucky River (Pool #10) | Clark |

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|---|---|---|
| Hyden-Leslie County Water District | Mile 76.6 [~~75.4~~] of Middle Fork Kentucky River [~~(Buckhorn Reservoir)~~] | Leslie |
| Kentucky American Northern Division [~~Owenton Water Works~~] | Mile 0.55 [~~0.6~~] of Severn Creek | Owen |
| Kentucky American Northern Division [~~Owenton Water Works~~] | Mile 6.3 of North Fork of North Severn Creek [~~1.1 of UT to North Severn Creek at mile 5.5~~] (Lower Thomas Lake) | Owen |
| Irvine Municipal Utilities | Mile 218.5 [~~223.4~~] of Kentucky River (Pool #11) | Estill |
| Manchester Water Works | Mile 19.5 [~~18.9~~] of Goose Creek | Clay |
| **SALT RIVER BASIN** | | |
| Shelbyville Municipal Water & Sewer Commission | Mile 27.5 [~~28.0~~] of Guist Creek (Guist Creek Lake) | Shelby |
| Lebanon Water Works Company | Mile 2.0 [~~1.0~~] of Fagan Branch (Fagan Branch Reservoir) | Marion |
| **GREEN RIVER BASIN** | | |
| Morgantown Utilities Commission | Mile 143.27 [~~144.8~~] of Green River | Butler |
| Greensburg Municipal Water Works | Mile 279.8 [~~283.5~~] of Green River | Green |
| Livermore Water Works | Mile 71.3 [~~71.9~~] of Green River | McLean |
| Elizabethtown Municipal Water Works A | From Old City Spring at mile 9.55 [~~10.6~~] of Valley Creek | Hardin |
| Elizabethtown Municipal Water Works A | Gaithers Station Spring at mile 7.48 [~~6.9~~] of Valley Creek | Hardin |
| Bowling Green Municipal Utilities | Mile 37.8 [~~38.1~~] of Barren River | Warren |
| Hodgenville Water Works | Mile 114.7 [~~5.8~~] of North Fork Nolin River | Larue |
| Central City Municipal Water & Sewer | Mile 85.4 [~~86.0~~] of Green River | Muhlenberg |
| Ohio County Water Plant | Mile 130.55 [~~131.9~~] of Green River | Ohio |
| Edmonson County Water District | Mile 181.3 [~~183.7~~] of Green river | Edmonson |
| Liberty Water Works | Mile 1.4 [~~0.9~~] of Hickman Creek (Lake Liberty) | Casey |
| Hardin County Water District #2 | Nolin River at mile 80.4 [~~75.3~~] (White Mills Spring) | Hardin |
| Green River Valley Water District | Mile 237.0 [~~240.6~~] of Green River | Hart |
| Scottsville Municipal Water Works | Mile 91.7 [~~88.6~~] of Barren River (Barren River Lake) | Allen |
| Edmonson County Water District | Mile 28.0 [~~23.5~~] of Nolin river (Nolin Reservoir) | Grayson |
| Hodgenville Water Works | Mile 0.3 of UT at mile 116.9 [~~8.1~~] of North Fork Nolin river (Salem Lake) | Larue |
| **LOWER CUMBERLAND RIVER BASIN** | | |

| | | |
|---|---|---|
| Kentucky State Penitentiary | Mile 43.65 [~~40.2~~ ] of Cumberland River (Lake Barkley) | Lyon |
| Hopkinsville Water Environmental Authority | Mile 74.83 [~~14.2~~] of North Fork Little River | Christian |
| Hopkinsville Water Environmental Authority | Mile 14.6 [~~11.9~~] of Little River (Lake Barkley) | Trigg |
| Princeton Water Department | Mile 46.0 [~~41.9~~] of Cumberland River (Lake Barkley) | Lyon |
| Kuttawa Municipal Water Plant | Mile 41.0 [~~37.9~~] of Cumberland River (Lake Barkley) | Lyon |
| Crittenden-Livingston Co Water District | Mile 15.95 [~~14.0~~] of Cumberland River | Livingston |
| Cadiz Water Company | Mile 13.5 of Little River (emergency use only when primary Cadiz Spring is unable to provide sufficient supply) | Trigg |
| **TRADEWATER RIVER BASIN** | | |
| Providence Municipal Water Works | Mile 40.8 [~~41.3~~] of Tradewater River | Webster |
| **OHIO IRIVER BASIN (MAIN STEM AND MINOR TRIBUTARIES)** | | |
| Marion Municipal Water Works | Mile 25.6 [~~26.4~~] of Crooked Creek (City Lake) | Crittenden |

**WATERS ADDED TO SURFACE WATER USE DESIGNATIONS**

| **BIG SANDY RIVER BASIN** | | | | |
|---|---|---|---|---|
| Stream | Zone (Descriptive and water body or segment river miles) | County | Use Designation | Exceptions to Specific Criteria |
| Thompson Fork of Souders Branch | Mouth to Headwaters (0.0 – 1.0) | Floyd | WAH, PCR, SCR, OSRW | |
| **KENTUCKY RIVER BASIN** | | | | |
| Bullskin Creek of South Fork Kentucky River | Mouth to Headwaters (0.0 – 14.55) | Clay | WAH, PCR, SCR, OSRW | |
| Joyce Fork of Cortland Fork | Mouth to Headwaters (0.0 -1.2 | Owsley | WAH, PCR, SCR, OSRW | |
| Little Sturgeon Creek of Sturgeon Creek | Mouth to Warren Chapel Branch (0.0 – 3.0) | Owsley | WAH, PCR, SCR, OSRW | |
| Low Gap Branch of Elk Creek | Mouth to Headwaters (0.0 – 0.8) | Letcher | WAH, PCR, SCR, OSRW | |
| Lower Devil Creek of North Fork Kentucky River | Mouth to Middle Fork Lower Devil Creek (0.0 – 4.65) | Lee | WAH, PCR, SCR, OSRW | |
| **GREEN RIVER BASIN** | | | | |
| Big Brush Creek | Brush Creek to Poplar Grove Branch (13.0 – 17.3) | Green | WAH, PCR, SCR, OSRW | |
| Elk Lick Creek | 0.1 Mile Downstream of Mouth of Duck Lick Creek to Barren Fork Creek and Edger Creek (3.6 – 11.8) | Logan | WAH, PCR, SCR, OSRW | |
| Puncheon Creek | Mouth to state line | Allen | WAH, PCR, SCR, OSRW | |
| **LOWER CUMBERLAND RIVER BASIN** | | | | |
| Cumberland River | 0.2 Mile Downstream of Hickory Creek to 0.6 mile Upstream of Sugar Creek (10.2 – 11.9) | Livingston | WAH, PCR, SCR, OSRW | |
| West Fork of Red River | State lint to Montgomery Creek (14.75 – 26.85) | Christian | CAH, PCR, SCR, OSRW | |

Attachment E

**TWENTY-SEVEN OSRW ADDITIONS**

| Stream | Zone (Descriptive and water body or segment river miles) | County | Use Designation | Exceptions to Specific Criteria |
|---|---|---|---|---|
| **BIG SANDY RIVER BASIN** | | | | |
| Thompson Fork of Souders Branch | Mouth to Headwaters (0.0 – 1.0) | Floyd | WAH, PCR, SCR, OSRW | |
| Unidentified Tributary of Open Fork Paint Creek | Mouth to Headwaters (0.0 – 0.8) | Morgan | WAH, PCR, SCR, OSRW | |
| **KENTUCKY RIVER BASIN** | | | | |
| Bullskin Creek of South Fork Kentucky river | Mouth to Headwaters (0.0 – 14.55) | Clay | WAH, PCR, SCR, OSRW | |
| Jessamine Creek of Kentucky River | Stream segment within the R.J. Corman Natural Area (12.3 – 13.55) | Jessamin e | WAH, PCR, SCR, OSRW | |
| Joyce Fork of Cortland Fork | Mouth to Headwaters (0.0 – 1.2) | Owsley | WAH, PCR, SCR, OSRW | |
| Little Sturgeon Creek of Sturgeon Creek | Mouth to Warren Chapel Branch (0.0 -3.0) | Owsley | WAH, PCR, SCR, OSRW | |
| Low Gap Branch of Elk Creek | Mouth to Headwaters (0.0 – 0.8) | Letcher | WAH, PCR, SCR, OSRW | |
| Lower Devil Creek of North Fork Kentucky River | Mouth to Middle Fork Lower Devil Creek (0.0 – 4.65) | Lee | WAH, PCR, SCR, OSRW | |
| **GREEN RIVER BASIN** | | | | |
| Big Brush Creek | Brush Creek to Poplar Grove Branch (13.0 – 17.3) | Green | WAH, PCR, SCR, OSRW | |
| Elk Lick Creek | 0.1 Mile Downstream of Mouth of Duck Lick Creek to Barren fork Creek and Edger Creek (3.6 – 11.8) | Logan | WAH, PCR, SCR, OSRW | |
| Puncheon Creek | Mouth to state line | Allen | WAH, PCR, SCR, OSRW | |

| | | | | |
|---|---|---|---|---|
| **LOWER CUMBERLAND RIVER BASIN** | | | | |
| Cumberland River | 0.2 Mile Downstream of Hickory Creek to 0.6 mile Upstream of Sugar Creek (10.2 – 11.9) | Livingston | WAH, PCR, SCR, OSRW | |
| **UPPER CUMBERLAND RIVER BASIN** | | | | |
| Capuchin Creek of Jellico Creek | Basin from Mouth to Kentucky/Tennessee State Line (0.0 – 1.25) | McCreary | WAH, PCR, SCR, OSRW | |
| Clear Creek of Roundstone Creek | Scaffold Cane Branch to Davis Branch (3.45 – 7.8 | Rockcastle | WAH, PCR, SCR, OSRW | |
| Elisha Branch of Laurel Creek | Basin | McCreary | WAH, PCR, SCR, OSRW | |
| Jellico Creek of Cumberland River | Basin From and Including Capuchin Creek to the Kentucky/Tennessee State Line (22.5 to 25.25) | McCreary | WAH, PCR, SCR, OSRW | |
| Kettle Creek | Kentucky/Tennessee State Line to Wells Creek (1.75 -6.1) | Monroe | WAH, PCR, SCR, OSRW | |
| Laurel Creek of Marsh Creek | Basin above Mouth of Jennys Branch to Laurel Creek Lake Dam (3.2 – 9.0) | McCreary | WAH, PCR, SCR, OSRW | |
| Little White Oak Creek | Mouth to Headwaters (0.0 – 2.6) | Laurel | WAH, PCR, SCR, OSRW | |
| Meadow Branch of Poor Fork Cumberland River | Mouth to River Mile 1.95 and Basin above the Eater-Southeast Unnamed Tributary | Harlan | WAH, PCR, SCR, OSRW | |
| Unidentified Tributary of Cane Creek of Rockcastle River | Mouth to Headwaters (0.0 – 1.2) | Laurel | WAH, PCR, SCR, OSRW | |
| Wolf Creek of Clear Fork | Basin above Little Wolf Creek (2.0 – 5.9) | Whitley | WAH, PCR, SCR, OSRW | |
| **TENNESSEE RIVER BASIN** | | | | |
| Tennessee River | River 12.0 (approximately 0.4 miles above Mud Creek) to 22.8 (Kentucky Lake Dam | Livingston /Marshall | WAH, PCR, SCR, OSRW | |
| **OHIO RIVER BASIN (Main Stem and Minor Tributaries)** | | | | |
| Ashbys Fork | Mouth to Petersburg road | Boone | WAH, PCR, | |

| | | | | |
|---|---|---|---|---|
| | (SR20) (0.0 – 3.7) | | SCR, OSRW | |
| Ohio River | River Mile 856.4 – 852.0 | Union | WAH, PCR, SCR, OSRW | |
| Ohio River | River Mile 933.0 – 937.0 | McCracken | WAH, PCR, SCR, OSRW | |

**CHANGES TO DESCRIPTIONS OF SURFACE WATER USE DESIGNATIONS**

| Stream | Zone (Descriptive and water body or segment river miles) | County | Use Designation | Exceptions to Specific Criteria |
|---|---|---|---|---|
| **LITTLE SANDY RIVER BASIN** | | | | |
| Big Sinking Creek of Little Sandy River | SR 986 to Clay Fork and Arab Fork (11.0 – 15.9 [~~6.1 – 15.2~~]) | Carter/ Elliott | WAH, PCR, SCR, OSRW | |
| **LICKING RIVER BASIN** | | | | |
| Licking River | River Mile 159.3 [~~159.5~~] (SR [~~Hwy~~] 211) to River Mile 170.5 [~~170.6~~] (unnamed Road of Slate [~~Slatey~~] Point Road) | Bath/ Rowan/ Fleming | WAH, PCR, SCR, OSRW | |
| **SALT RIVER BASIN** | | | | |
| West Fork of Otter Creek of Rolling Fork of Salt River | Mouth to Headwaters (0.0 – 5.4 [~~5.1~~]) | Larue | WAH, PCR, SCR, OSRW | |
| **LOWER CUMBERLAND RIVER BASIN** | | | | |
| West Fork of Red River | State Line to River Mile 32.2 (14.75 – 32.2) [~~29.0 (14.5 – 32.2)~~] | Christian | CAH, PCR, SCR | |
| **UPPER CUMBERLAND RIVER BASIN** | | | | |
| Barren Fork of Indian Creek | Basin | McCreary | WAH, PCR, SCR, OSRW | |
| Jennys Branch of Laurel Creek [~~Fork~~] of March Creek | Basin | McCreary | WAH, PCR, SCR, OSRW | |
| Laurel Fork of Clear Fork of Cumberland River | River Mile 4.3 [~~4.25~~] (Kentucky/Tennessee state line) to River Mile 16.0 (John Partin road off Hwy 90) | Whitley | WAH, PCR, SCR, OSRW | |
| Unidentified Tributary (across from Hemlock Grove at river mile 9.3 of Rock Creek) of Rock Creek of South Fork of Cumberland River | Mouth to Headwaters (0.0 – 1.2) | McCreary | WAH, PCR, SCR, OSRW | |
| Unidentified Tributary (RMI 17.05 [~~17.0~~] of Rock Creek) of Rock Creek of South Fork of Cumberland River | Mouth to Headwaters (0.0 – 1.9 [~~1.3~~]) | McCreary | WAH, PCR, SCR, OSRW | |
| **TENNESSEE RIVER BASIN** | | | | |

| | | | | |
|---|---|---|---|---|
| Clarks River of Tennessee River | Persimmon Slough to Middle Fork Creek (28.6 – 30.6) [~~28.7 – 30.7~~)] | Marshall | WAH, PCR, SCR, OSRW | |
| Wildcat Creek of Kentucky Lake (Blood River of Tennessee River) | Ralph Wright Road Crossing to Headwaters (3.6 [~~2.8~~] – 6.8) | Calloway | WAH, PCR, SCR, OSRW | |
| **OHIO RIVER BASIN (Main Stem and Minor Tributaries)** | | | | |
| Ohio River | River Mile 937.0 [~~940.7~~] to River Mile 939.8 [~~943.3~~] | McCracken | WAH, PCR, SCR, OSRW | |
| Unidentified Tributary of Big Sugar Creek | I-71 to Headwaters (1.0 – 3.4) [~~(1.0-1.8)~~] | Gallatin | WAH, PCR, SCR, OSRW | |
| West Fork of Massac Creek | SR 724 [~~725~~] to Little Massac Creek (1.0-6.2) | McCracken | WAH, PCR, SCR, OSRW | |
| Yellowbank Creek | Ohio River Backwaters to Headwaters (1.5 -11.8) [~~(1.8 – 11.8)~~] | Breckinridge | WAH, PCR, SCR, OSRW | |
| **MISSISSIPPI RIVER BASIN (Main Stem and Minor Tributaries)** | | | | |
| Mississippi River | River Mile 947.0 [~~935.0~~] to River Mile 942.3 [~~930.0~~] | Hickman [~~Carlisle~~] | WAH, PCR, SCR, OSRW | |
| Mississippi River | River Mile 959.0 [~~947.0~~] to River Mile 957.1 [~~945.0~~] | Carlisle | WAH, PCR, SCR, OSRW | |