



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 7
11201 Renner Boulevard
Lenexa, Kansas 66219

MAR 05 2020

Mr. Tom Stiles
Director, Bureau of Water
Kansas Department of Health and Environment
1000 S.W. Jackson, Suite 420
Topeka, Kansas 66612-1368

Dear Mr. Stiles:

RE: Approval of TMDL document for Republican River watershed Hardy, Nebraska to Rice, Kansas

This letter responds to the submission from the Kansas Department of Health and Environment, originally received by the U.S. Environmental Protection Agency, Region 7 on September 25, 2019, for a Total Maximum Daily Load document which contained TMDLs for total phosphorus. The final approved version was received on February 4, 2020. The Republican River was identified on the 2018 Kansas Section 303(d) List as impaired by total phosphorus. This submission fulfills the Clean Water Act statutory requirement to develop TMDLs for impairments listed on a state's §303(d) list. The specific impairments (water body segments and causes) are:

Water Body Name	WBID	Cause
Republican R	102500162	Total Phosphorus
Walnut Cr	1025001640	Total Phosphorus
Buffalo Cr	1025001659	Total Phosphorus
Louisa Cr	1025001661	Total Phosphorus
Cedar Cr	1025001663	Total Phosphorus
Oak Cr	1025001675	Total Phosphorus
Crosby Cr	1025001677	Total Phosphorus
Republican R	102500161	Total Phosphorus
Spring Cr	1025001678	Total Phosphorus
Bean Cr	1025001676	Total Phosphorus
White Rock Cr	1025001641	Total Phosphorus
Otter Cr	1025001679	Total Phosphorus
Dry Cr	1025001680	Total Phosphorus
Republican R	1025001728	Total Phosphorus
Beaver Cr	1025001745	Total Phosphorus
Republican R	1025001726	Total Phosphorus
Buffalo Cr, Middle	102500179037	Total Phosphorus
Buffalo Cr, East	1025001768	Total Phosphorus
Buffalo Cr	1025001737	Total Phosphorus
Marsh Cr, East	1025001742	Total Phosphorus
Marsh Cr	1025001735	Total Phosphorus



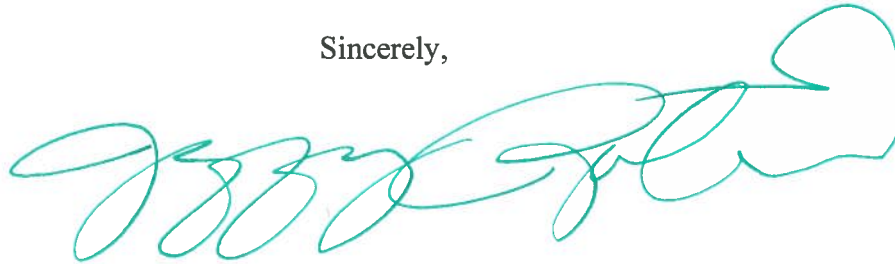
Marsh Cr, West	1025001736	Total Phosphorus
Marsh Cr	1025001734	Total Phosphorus
Marsh Cr	1025001730	Total Phosphorus
Cheyenne Cr	1025001755	Total Phosphorus
Whites Cr	1025001754	Total Phosphorus
Buffalo Cr	1025001729	Total Phosphorus
Wolf Cr	1025001738	Total Phosphorus
Hay Cr	1025001749	Total Phosphorus
Cool Cr	1025001750	Total Phosphorus

The EPA has completed its review of the TMDL document with supporting documentation and information. By this letter, the EPA approves the TMDLs submitted under § 303(d). Enclosed with this letter is the EPA Region 7 TMDL Decision Document summarizing the rationale for the EPA's approval of the TMDLs. The EPA believes the elements of the TMDLs as described in the enclosed document adequately address the cause of concern, taking into consideration seasonal variation and a margin of safety.

Although the EPA does not review the monitoring or implementation plans submitted by the state for approval, the EPA acknowledges the state's efforts. The EPA understands that the state may use the monitoring plan to gauge the effectiveness of the TMDL and determine if future revisions are necessary or appropriate to meet applicable water quality standards. The EPA recognizes that technical guidance and support are critical to determining the feasibility of and achieving the goals outlined in these TMDLs. Therefore, the implementation plan in this TMDL document provides information regarding implementation efforts to achieve the loading reductions identified.

The EPA appreciates the thoughtful effort that the KDHE has put into these TMDLs. We will continue to cooperate with and assist, as appropriate, in future efforts by the KDHE, to develop TMDLs. If you have any questions, contact Jennifer Kissel, of my staff, at (913) 551-7982.

Sincerely,



Jeffery Robichaud
 Director
 Water Division

Enclosure

cc: Michelle Probasco, KDHE

United States Environmental Protection Agency

Region 7

Total Maximum Daily Load Approval



**Republican River from Hardy, Nebraska to Rice, Kansas
in Kansas**

Total Phosphorus

A handwritten signature in blue ink, appearing to read "Jeffery Robichaud", is written over a horizontal line.

Jeffery Robichaud
Director
Water Division

3/5/2020

Date

(This page intentionally left blank)



EPA Region 7 TMDL Review

Submittal Date || Initial: 9/24/19 Final: 2/4/20
Approved: Yes

TMDL ID KS1025001612
State KS
Document Name Lower Republican River Watershed from Hardy, NE to Rice KS
Basin(s) Lower Republican
HUC(s) **HUC8:** 10250016
HUC10 (12): 04 (08, 09), 05 (01, 03, 04, 07), 06 (02, 04, 05), 07 (08), 08 (01, 02, 03, 04, 05), 09 (01, 02, 03)
HUC8: 10250017
HUC10 (12): 01 (01, 02, 03, 04, 05, 06, 07), 02 (01, 02, 03, 04, 05), 03 (01, 02, 03, 04, 10)
Water body(ies) Republican River
Tributary(ies) Walnut Cr, Buffalo Cr, Louisa Cr, Cedar Cr, Oak Cr, Crosby Cr, Spring Cr, Bean Cr, White Rock Cr, Otter Cr, Dry Cr, Beaver Cr, Buffalo Cr, March Cr, Cheyenne Cr, Whites Cr, Wolf Cr, Hay Cr, Cool Cr
Number of Segments 30
Number of Segments for Protection 303(d)(3) None
Causes Impaired Uses: Expected aquatic life, contact recreation, and domestic water supply

Table 1: NPDES Permitted Facilities*

Permittee	Facility Type	NPDES Permit Number	Phase I Daily Total Phosphorus Wasteload Allocation (lbs/day)	Total Phosphorus Annual Wasteload Allocations (lbs/year)
City of Formoso	Non-discharging lagoon	KSJ000371	-	-
City of Jamestown	Non-discharging lagoon	KSJ000373	-	-
City of Jewell	Non-discharging lagoon	KSJ000374	-	-
City of Randall	Non-discharging lagoon	KSJ000366	-	-
City of Mankato	Municipal discharging lagoon	KS0095231	2.27	829
Abram Ready Mix, Inc. – Concordia Plant	Concrete operation pit dewatering	KSG110080	0	0
Concordia Ready-Mix	Concrete operation pit dewatering	KSG110064	0	0
City of Republic	Non-discharging lagoon	KSJ000367	-	-
City of Scandia	Non-discharging lagoon	KSJ000368	-	-
City of Courtland	Municipal discharging lagoon	KS0083399	0	0
Nesika Energy Ethanol Plant	Industrial mechanical treatment facility	KS0096539	0.125	45
City of Concordia	Municipal wastewater treatment	KS0025577	11.3	4,125

	facility			
--	----------	--	--	--

*The non-discharging lagoons operated by the cities of Formoso, Jamestown, Jewell, Randall, Republic, and Scandia are all prohibited from discharging, their systems do not monitor for TP, and are not expected to contribute to the TP impairment in the watershed. Therefore, each are not assigned a wasteload allocation.

Table 2: TMDL Daily Load Phase II at Median Flow

Targeted Pollutant	Total Phosphorus (TP)			
Station	Load Capacity (LC) (lbs/day)	Wasteload Allocation (WLA) (lbs/day)	Reserve Wasteload Allocation (lbs/day)	Load Allocation (lbs/day)
Buffalo Cr nr Concordia (SC509)	5.8	2.3	-	3.5
Wolf Cr nr Concordia (SC707)	0.4	-	-	0.4
Republican R nr Rice (SC510)	101.3	6.64	1.46	93.2

Submittal Letter and Total Maximum Daily Load Revisions

The state submittal letter indicates final TMDL(s) for specific pollutant(s) and water(s) were adopted by the state and submitted to the EPA for approval under Section 303(d) of the Clean Water Act [40 CFR § 130.7(c)(1)]. Include date submitted letter was received by the EPA, date of receipt of any revisions and the date of original approval if submittal is a revised TMDL document.

The TMDL document was initially submitted by the Kansas Department of Health and Environment to Region 7 of the U.S. Environmental Protection Agency on September 24, 2019. Following comments from the EPA, revised TMDL documents were submitted as emailed attachments on February 4, 2020. The EPA approves this latest version of the TMDL document.

Water Quality Standards Attainment

The targeted pollutant is validated and identified through assessment and data. The water body’s loading capacity for the applicable pollutant is identified and the rationale for the method used to establish the cause-and- effect relationship between the numeric target and the identified pollutant sources is described. The TMDL(s) and associated allocations are set at levels adequate to result in attainment of applicable water quality standards [40 CFR § 130.7(c)(1)]. A statement that the WQS will be attained is made.

The target pollutant, total phosphorus, is validated and identified through assessment and data.

The current (2000-2018) median TP concentrations for water bodies covered by this document range from 0.240 to 0.464 mg/L. Stream chemistry stations SC231, SC509, SC707, SC510 were listed as impaired for TP for the 2018 list. SC231 and SC510 were also listed as impaired for biology for the 2018 list. SC707 was also listed as impaired for Dissolved Oxygen for the 2018 list.

The Main Stem Water Quality Limited Segments and Tributaries listed in this document are impaired

for the following uses: Expected Aquatic Life, Contact Recreation, and Domestic Water Supply. Load capacities are based on TP management milestones and the estimated flow condition. Current TP median concentrations are given below in Table 3 (Table 16 in the document).

Table 3: TP Current condition from 2000 through 2018 and Phase I and Phase II milestones for the Republican River from Hardy, NE to Rice KS.

Station	Current Condition (2000-2018)	Phase I		Phase II	
	Median TP (mg/L)	TP Milestone (mg/L)	TP Reduction (%)	TP Milestone (mg/L)	TP Reduction (%)
Buffalo Cr nr Concordia (SC509)	0.453	0.216	52	0.120	74
Wolf Cr nr Concordia (SC707)	0.396	0.216	45	0.120	70
Republican R nr Rice (SC510)	0.300	0.216	28	0.120	60

The ultimate endpoint of this document will be to achieve the Kansas Surface Water Quality Standards by eliminating excessive primary productivity and impairment to uses. Additionally, this document will establish a TMDL for biology at SC231 and SC510 and DO for SC707.

The actual endpoints for successful implementation of this TMDL document will be attaining a Kansas Aquatic Life Use Index score greater than 13, a median sestonic chlorophyll-*a* concentration less than or equal to 10 µg/L, dissolved oxygen concentrations greater than 5.0 mg/L, dissolved oxygen saturation less than 110%, and values within the range of 6.5-8.5 for pH. These endpoints apply at all points in the watershed but are assessed at regular SC stations.

The TMDL document identified two phases of TP management milestones to successfully attain the designated uses in these water bodies. The final phased milestone is a median concentration of 0.120 mg/L.

The formula to calculate the TMDL is:

$$TMDL = LC = WLA + LA + MOS$$

Where: TMDL = total maximum daily load; LC = loading capacity; WLA = sum of wasteload allocations (point sources); LA = sum of load allocations (nonpoint sources); MOS = margin of safety (to account for uncertainty).

At median flows, the TMDL per day loading capacities for the stations are given above in Table 2, and in the TMDL document in Tables 27 – 29.

The targets in this TMDL document are established at a level necessary to attain and maintain water quality standards.

Designated Use(s), Applicable Water Quality Standard(s) and Numeric Target(s)

The submittal describes applicable water quality standards, including beneficial uses, applicable numeric and/or narrative criteria, and a numeric target. If the TMDL(s) is based on a target other than a numeric water quality criterion, then a numeric expression, site specific if possible, was developed from a narrative criterion and a description of the process used to derive the target is included in the submittal.

The submittal included the appropriate narrative criteria applicable to nutrients. The designated uses for all 30 segments include expected aquatic life and some type of recreational use. The only segments with domestic water supply use include Buffalo Cr, Republican R, Spring Cr, Bean Cr, White Rock Cr, Dry Cr, Republican R, Beaver Cr, Marsh Cr, and Wolf Cr. For other designated uses, see Table 2 in the TMDL document.

The TMDL TP management milestones relate the narrative water quality standards for the introduction of plant nutrients into surface waters (Kansas Administrative Regulations (K.A.R.) 28-16-28e(2)(A), K.A.R. 28-16-28e(d)(3)(D) and K.A.R. 28-16-28e(d)(7)(A)) and the prohibition of taste and odor producing substances of artificial origin impacting conventional water treatment or that impart an unpalatable flavor to edible aquatic or semi aquatic life or terrestrial wildlife, or that result in noticeable odors in the vicinity of surface waters (K.A.R 28-16-28e(b)(7)).

The document also identified EPA approved numeric water quality standards for dissolved oxygen and pH. In Kansas' Water Quality Standards at K.A.R. 28-16-28e(e), which states that the dissolved oxygen criterion is 5 mg/L. In Kansas' Water Quality Standards at K.A.R. 28-16-28e(e) Tables of Numeric Criteria, specific numeric criteria for pH is that artificial sources of pollution shall not cause the pH of any surface water outside of a zone of initial dilution to be below 6.5 and above 8.5.

The TMDLs for each monitoring station are given in Tables 27 – 29 of the TMDL document. The TMDL total phosphorus milestones must be met at all points within the waters, calculations are made at monitoring stations because that is where the data exists to make these calculations. The load duration curve method uses the concentration milestone and flow to calculate a load.

Pollutant(s) of Concern

A statement that the relationship is either directly related to a numeric water quality standard, or established using surrogates and translations to a narrative WQS is included. An explanation and analytical basis for expressing the TMDL(s) through surrogate measures, or by translating a narrative water quality standard to a numeric target is provided (e.g., parameters such as percent fines and turbidity for sediment impairments, or chlorophyll-a and phosphorus loadings for excess algae). For each identified pollutant, the submittal describes analytical basis for conclusions, allocations and a margin of safety that do not exceed the loading capacity. If the submittal is a revised TMDL document, there are refined relationships linking the load to water quality standard attainment. If there is an increase in the TMDL(s), there is a refined relationship specified to validate that increase (either load allocation or wasteload allocation). This section will compare and validate the change in targeted load between the versions.

There is an established link between the narrative water quality standards and the TP management milestones. The TMDL document identified the 25th percentile of total phosphorus medians of the Level IV Ecoregions in which these water bodies are located as the Phase II milestone.

EPA agrees the milestones as explained will address the narrative and numeric criteria outlined in the TMDL document. Once met the milestones will attain and maintain water quality standards.

Source Analysis

Important assumptions made in developing the TMDL document, such as assumed distribution of land use in the watershed, population characteristics, wildlife resources and other relevant information affecting the characterization of the pollutant of concern and its allocation to sources, are described. Point, nonpoint and background sources of pollutants of concern are described, including magnitude and location of the sources. The submittal demonstrates all significant sources have been considered. If this is a revised TMDL document any new sources or removed sources will be specified and explained.

In the absence of a national pollutant discharge elimination system permit, the discharges associated with sources were applied to the load allocation, as opposed to the wasteload allocation for purposes of this TMDL document. The decision to allocate these sources to the LA does not reflect any determination by the EPA as to whether these discharges are, in fact, unpermitted point source discharges within this watershed. In addition, by establishing these TMDL(s) with some sources treated as LAs, the EPA is not determining that these discharges are exempt from NPDES permitting requirements. If sources of the allocated pollutant in this TMDL document are found to be, or become, NPDES-regulated discharges, their loads must be considered as part of the calculated sum of the WLAs in this TMDL document. Any WLA in addition to that allocated here is not available.

The TMDL document identified both point and nonpoint sources of total phosphorus loading.

NPDES permitted sources are listed in Table 17 of the TMDL document (and Table 1 of this document). The NPDES Table 17 in the TMDL document lists the monitoring site to which they discharge, the current effluent flow (where defined), the current total phosphorus concentration in the effluent (where monitored) and the expiration date of the permit. There are 12 permitted facilities identified. Table 4 below is summary of the number of each type of NPDES permitted facility in the watershed.

Table 4: Types of NPDES permitted facilities in the TMDL watershed.

Type of NPDES permitted facility	Number of permitted facilities in watershed
Non-discharging lagoon	6
Municipal discharging lagoon	2
Concrete operation pit dewatering	2
Industrial mechanical treatment facility	1
Municipal wastewater treatment facility	1

Livestock and waste management systems consists of 29 certified or permitted Animal Feeding Operations and Concentrated Animal Feeding Operations within the Republican River TMDL watershed. Only two CAFOs (located in the Rice watershed) are large enough to require a federal permit.

Any CAFO that does not obtain an NPDES permit must operate as a no-discharge facility. A discharge from an unpermitted CAFO is a violation of Section 301 of the Clean Water Act. It is the EPA's position that all CAFOs should obtain an NPDES permit because it provides clarity of compliance requirements. This TMDL document does not reflect a determination by the EPA that such facilities do not meet the definition of a CAFO nor that the facility does not need to obtain a permit. To the contrary, a CAFO that discharges has a duty to obtain a permit. If it is determined that any such operation is a CAFO that discharges, any future WLA assigned to the facility must not result in an exceedance of the sum of the

WLAs in this TMDL document as approved.

Diverted water systems in Cloud, Jewell, Republic and Smith counties is primarily for irrigation, but it is also used for municipal and stockwater. There is a total of 2,762 diversions among all the counties. The amount of irrigated land in the counties has decreased.

On-site waste systems were estimated as 1,250 septic systems in the watershed using the U.S. Environmental Protection Agency's Spreadsheet Tool for Estimating Pollutant Load. These systems have an estimated failure rate of 10 – 15 percent.

Contributing runoff from rainfall is expected from some 74% of the watershed at rates in excess of 1.71 inches per hour.

Background levels of phosphorus are also located in the landscape and in the soil profile. Terrestrial and aquatic biota also contribute to phosphorus loadings.

Total population, according to the 2010 U.S. Census was around 21,000 (Table 24 of the TMDL document). Population is expected to decrease by 2040.

The 2011 National Land Cover Database indicates the dominate land use in the watershed is cultivated crops. Grassland, including pastureland and hay fiends, is the second most prevalent land use in the watershed. The counties in the watershed have a total of 2,762 diversions (Table 22 of the TMDL document). The main use for diverted water in these counties is irrigation.

Table 5: Land Use Table (Table 21 in the TMDL document) from 2011 National Land Cover Database in the Republican River TMDL Watershed.

Open Water	Developed	Barren	Forest	Grassland	Cultivated Crops	Wetlands
1%	5%	0%	3%	33%	57%	1%

There are no Municipal Separate Storm Sewer System permits within the watershed.

As submitted, the TMDL document contains a complete listing of all known pollutant sources.

Allocation - Loading Capacity

The submittal identifies appropriate loading capacities, wasteload allocations for point sources and load allocations for nonpoint sources. If no point sources are present, the WLA is stated as zero. If no nonpoint sources are present, the LA is stated as zero [40 CFR § 130.2(i)]. If this is a revised TMDL document the change in loading capacity will be documented in this section. All TMDLs must give a daily number. Establishing TMDL "daily" loads consistent with the U.S. Court of Appeals for the D.C. circuit decision in Friends of the Earth, Inc. v. EPA, et al., No. 05-5015, (April 25, 2006).

The LC is identified at each stream sampling station as part of a load duration curve calculating load based on median TP concentration and flow at various flow percentiles of flow exceedance. As loads approach those identified under Phase I, a biological assessment will determine compliance with the narrative nutrient criteria. Presuming one or more of the numeric endpoints are not met at the end of Phase I, Phase II will commence. Analysis has shown that all goals should be met at Phase II loads (median concentrations).

The LCs are calculated at monitoring stations, but the targeted TP concentrations apply at all points in the segments covered by this TMDL document.

Phase II maximum daily loads at median flow (in pounds per day) are listed in Table 2 of this document, and Tables 27 – 29 in the TMDL document.

The EPA agrees that the LC will attain and maintain water quality standards.

Wasteload Allocation Comment

The submittal lists individual wasteload allocations for each identified point source [40 CFR § 130.2(h)]. If a WLA is not assigned it must be shown that the discharge does not cause or contribute to a water quality standard excursion, the source is contained in a general permit addressed by the TMDL, or extenuating circumstances exist which prevent assignment of individual WLA. Any such exceptions must be explained to a satisfactory degree. If a WLA of zero is assigned to any facility it must be stated as such [40 CFR § 130.2(i)]. If this is a revised TMDL document, any differences between the original TMDL(s) WLA and the revised WLA will be documented in this section.

The WLAs are based on the design flow of each facility where possible and likelihood of its being a source of TP. Industrial flows without design flows use current mean discharge rates based on available DMR data. For facilities not expected to contribute, their WLAs are set to zero. A future growth reserve wasteload allocation is also included in these calculations.

The facility by facility WLAs are given in Table 26 of the TMDL document and the sum of the WLAs by monitoring station and flow exceedance are given in Tables 27 - 29.

Table 6. Phase II WLA at median flow (pounds/day)

SC Station	WLA	Reserve WLA	Sum WLA
SC509	2.3	-	2.3
SC707	-	-	-
SC510	6.64	1.46	8.1

Load Allocation Comment

All nonpoint source loads, natural background and potential for future growth are included. If no nonpoint sources are identified, the load allocation must be given as zero [40 CFR §130.2(g)]. If this is a revised TMDL document, any differences between the original TMDL(s) LA and the revised LA will be documented in this section.

The LA is the amount of the pollutant load that is assigned to nonpoint sources and includes all existing and future nonpoint sources, as well as natural background contributions. LAs are calculated as the remainder of the LC after the allocations to the WLA and the MOS.

Phase II maximum daily LAs at median flow (in pounds per day) are listed in Table 7 below, and in Tables 27-29 in the TMDL document:

Table 7. Phase II LA at median flow (pounds/day)

SC Station	LA
SC509	5.8
SC707	0.4
SC510	101.3

The TMDL document has identified all known nonpoint sources of TP in the watershed.

Margin of Safety

The submittal describes explicit and/or implicit margins of safety for each pollutant [40 CFR § 130.7(c)(1)]. If the MOS is implicit, the conservative assumptions in the analysis for the MOS are described. If the MOS is explicit, the loadings set aside for the MOS are identified and a rationale for selecting the value for the MOS is provided. If this is a revised TMDL document, any differences in the MOS will be documented in this section.

The MOS for this TMDL document is implicit. This is accounted for in the multiple targets and phased implementation of targets. The document shows that the Phase I milestones are compatible with meeting the aquatic life use. The Phase II milestones will result in median total phosphorus concentrations at levels at 52 percent lower than those which have been shown compatible with that use.

In addition, the LC is calculated using the annual median as a maximum concentration. This, in effect, identifies a measure of central tendency as the maximum which ensures the median will be met.

The EPA agrees that the state has provided implicit MOS to support the TMDL.

Seasonal Variation and Critical Conditions

The submittal describes the method for accounting for seasonal variation and critical conditions in the TMDL(s) [40 CFR § 130.7(c)(1)]. Critical conditions are factors such as flow or temperature which may lead to the excursion of the WQS. If this is a revised TMDL document, any differences in conditions will be documented in this section.

The load duration curve accounts for seasonal variation and critical conditions. The use of a median target for TP and sestonic chlorophyll-*a* also integrates loading into the biological response.

The EPA agrees that the state considered seasonal variation and critical conditions during the analysis of this TMDL and the setting of TMDL targets.

Public Participation

The submittal describes required public notice and public comment opportunities and explains how the public comments were considered in the final TMDL(s) [40 CFR § 130.7(c)(1)(ii)].

The public was given the opportunity to provide feedback during the TMDL process through website postings and public hearings. The TMDL was posted for public review on August 22, 2019 and a public hearing was held on September 6, 2019. No comments were received from the public.

EPA agrees that the public has had a meaningful opportunity to comment on the TMDL document.

Monitoring Plan for TMDL(s) Under a Phased Approach

The TMDL identifies a monitoring plan that describes the additional data to be collected to determine if the load reductions required by the TMDL lead to attainment of water quality standards, and a schedule for considering revisions to the TMDL(s) (where a phased approach is used) [40 CFR § 130.7]. If this is a revised TMDL document, monitoring to support the revision will be documented in this section. Although the EPA does not approve the monitoring plan submitted by the state, the EPA acknowledges the state's efforts. The EPA understands that the state may use the monitoring plan to gauge the effectiveness of the TMDLs and determine if future revisions are necessary or appropriate to meet applicable water quality standards.

The TMDL document identified stations SC231, SC509, SC707 and SC510 for future water quality

monitoring, Biological monitoring is to continue at stations SB231 and SB003.

Reasonable Assurance

Reasonable assurance only applies when less stringent wasteload allocation are assigned based on the assumption that nonpoint source reductions in the load allocation will be met [40 CFR § 130.2(i)]. This section can also contain statements made by the state concerning the state's authority to control pollutant loads. States are not required under Section 303(d) of the Clean Water Act to develop TMDL implementation plans and the EPA does not approve or disapprove them. However, this TMDL document provides information regarding how point and nonpoint sources can or should be controlled to ensure implementation efforts achieve the loading reductions identified in this TMDL document. The EPA recognizes that technical guidance and support are critical to determining the feasibility of and achieving the goals outlined in this TMDL document. Therefore, the discussion of reduction efforts relating to point and nonpoint sources can be found in the implementation section of the TMDL document and are briefly described below.

The states have the authority to issue and enforce state operating permits. Inclusion of effluent limits into a state operating permit and requiring that effluent and instream monitoring be reported to the state should provide reasonable assurance that instream water quality standards will be met. Section 301(b)(1)(C) requires that point source permits have effluent limits as stringent as necessary to meet WQS. However, for wasteload allocations to serve that purpose, they must themselves be stringent enough so that (in conjunction with the water body's other loadings) they meet WQS. This generally occurs when the TMDL(s)' combined nonpoint source load allocations and point source WLAs do not exceed the WQS-based loading capacity and there is reasonable assurance that the TMDL(s)' allocations can be achieved. Discussion of reduction efforts relating to nonpoint sources can be found in the implementation section of the TMDL document.

The TMDL requires reasonable assurances that any less stringent WLA will be met through greater reductions in the LAs. This TMDL does not depend on increased nonpoint source reductions to account for less stringent WLAs.

In addition, the TMDL document identified authorities available to the state to direct the called for reductions.

1. K.S.A. 65-164 and 165 empowers the Secretary of KDHE to regulate the discharge of sewage into the waters of the state.
2. K.S.A. 65-171d empowers the Secretary of KDHE to prevent water pollution and to protect the beneficial uses of the waters of the state through required treatment of sewage and established water quality standards and to require permits by persons having a potential to discharge pollutants into the waters of the state.
3. K.S.A. 2002 Supp. 82a-2001 identifies the classes of recreation use and defines impairment for streams.
4. K.A.R. 28-16-69 through 71 implements water quality protection by KDHE through the establishment and administration of critical water quality management areas on a watershed basis.
5. K.S.A. 2-1915 empowers the State Conservation Commission to develop programs to assist the protection, conservation, and management of soil and water resources in the state, including riparian areas.

6. K.S.A. 75-5657 empowers the State Conservation Commission to provide financial assistance for local project work plans developed to control nonpoint source pollution.
7. K.S.A. 82a-901, et. seq. empowers the Kansas Water Office to develop a state water plan directing the protection and maintenance of surface water quality for the waters of the state.
8. K.S.A. 82a-951 creates the State Water Plan Fund to finance the implementation of the *Kansas Water Plan*, including selected WRAPS.
9. The *Kansas Water Plan* provides the guidance to state agencies to coordinate programs intent on protecting water quality and to target those programs to geographic areas of the state for high priority in implementation.

The State Water Fund provides \$12-13 million annually for implementation of water quality and pollutant reduction activities.