



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION VII
901 NORTH 5TH STREET
KANSAS CITY, KANSAS 66101

15 NOV 2004

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REGION VII OFFICE

Jim Hull, Director
Water Pollution Control Program
Water Protection and Soil Conservation Division
Missouri Department of Natural Resources
P.O. Box 176
Jefferson City, MO 65102

Dear Mr. Hull:

RE: Approval of the TMDL for McKenzie Creek

This letter responds to the submission from the Missouri Department of Natural Resources (MDNR) received by the Environmental Protection Agency (EPA) on October 14, 2004, for one Total Maximum Daily Load (TMDL) document which contains a TMDL for pH. McKenzie Creek was identified on the 1998 and the 2002 Missouri §303(d) lists as impaired as a result of pH. This submission fulfills the Clean Water Act statutory requirement to develop TMDLs for impairments listed on a state's §303(d) list. The specific impairment (water body segment and pollutant) are:

Water Body Name	WBID	Listed pollutant	TMDL pollutant
McKenzie Creek	2787	pH	pH

EPA has completed its review of the TMDL with supporting documentation and information. By this letter, EPA approves the submitted TMDL. Enclosed with this letter is the Region 7 TMDL Decision Document which summarizes the rationale for EPA's approval of the TMDL. The EPA believes the separate elements of the TMDL described in the enclosed form adequately address the pollutant of concern, taking into consideration seasonal variation and a margin of safety.

EPA is currently in consultation under Section 7 of the Endangered Species Act with the U.S. Fish and Wildlife Service regarding this TMDL. While EPA is approving this TMDL at the present time, EPA may decide that changes to the TMDL are warranted based upon the results of the consultation when it is completed.

EPA appreciates the thoughtful effort that MDNR has put into this TMDL. EPA will continue to cooperate with and assist, as appropriate, in future efforts by MDNR to develop the remaining TMDLs.

Sincerely,

A handwritten signature in black ink, appearing to read "Leo J. Alderman", with a long horizontal flourish extending to the right.

Leo J. Alderman
Director
Water, Wetlands, and Pesticides Division

Enclosure

cc: Ann Crawford
TMDL Coordinator, Jefferson City, MO

✓
Phil Schroeder
MO Dept of Natural Resources, Jefferson City, MO

Scott Dye
Sierra Club, Columbia, MO



EPA Region 7 TMDL Review

TMDL ID 320 Water Body ID MOWBID 2787
Water Body Name McKenzie Creek
Pollutant pH
Tributary
State MO HUC 11010007-060001
Basin Black River
Submittal Date 10/14/2004
Approved yes

Submittal Letter

State submittal letter indicates final TMDL(s) for specific pollutant(s)/ water(s) were adopted by the state, and submitted to EPA for approval under section 303(d) of the Clean Water Act.

Received on October 14, 2004; submitted as a final TMDL document under a cover letter dated October 7, 2004.

Water Quality Standards Attainment

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. TMDL and associated allocations are set at levels adequate to result in attainment of applicable water quality standards.

The pH water quality standards require contaminants shall not cause the pH to be outside the range of 6.5 to 9.0 SU, the beneficial use is the protection of aquatic life. The allocations are set with a margin of safety, at the WQS criteria levels, which are adequate to result in attainment of the applicable WQS.

Numeric Target(s)

Submittal describes applicable water quality standards, including beneficial uses, applicable numeric and/or narrative criteria. If the TMDL 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 beneficial uses of McKenzie Creek are described, and the WQS for those beneficial uses are described. The targets are taken directly from the water quality criteria in Missouri's water quality standards for pH.

Link Between Numeric Target(s) and Pollutant(s) of concern

An explanation and analytical basis for expressing the TMDL through surrogate measures (e.g., parameters such as percent fines and turbidity for sediment impairments, or chlorophyll-a and phosphorus loadings for excess algae) is provided, if applicable. For each identified pollutant, the submittal describes analytical basis for conclusions, allocations and margin of safety that do not exceed the load capacity.

The numeric targets are the water quality criteria for pH. The relationship between the numeric targets and the pollutants is direct.

Source Analysis

Important assumptions made in developing the TMDL, 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, non point and background sources of pollutants of concern are described, including magnitude and location of the sources. Submittal demonstrates all significant sources have been considered.

The sources of acid (pH) is described. The major contribution was determined to be local precipitation (unbuffered acid rain partially attributable to sulfur dioxide emissions) and flood plain soils. The submittal demonstrates that all significant sources of acidity (pH) were identified and considered.

Allocation

Submittal identifies appropriate wasteload allocations for point, and load allocations for nonpoint sources. If no point sources are present the wasteload allocation is zero. If no nonpoint sources are present, the load allocation is zero.

McKenzie Creek will have to meet in-stream WQS for pH (6.5-9.0 SU).

WLA Comment

The Waste Load Allocation is set at 6.0 to 9.0 SU for Gad's Hill Quarry. (Permit #MO-0110051). The current permit requires the effluent pH be maintained in the range of 6.0 to 9.0 SU which conforms to the effluent regulations in the quarry's NPDES permit. Requiring the quarry to increase pH by 0.5 SU, is not justified at this time. This is a phased TMDL and as phase I, the quarry will provide pH data on a monthly basis, from several points in McKenzie Creek through the life of their existing permit. This will confirm whether or not the quarry is contributing to pH. If the quarry is contributing then phase II of this TMDL will dictate a revised pH limit for inclusion in the new permit.

LA Comment

The load allocation for pH is established as within the range of 6.5 to 9.0 SU.

Margin of Safety

Submittal describes explicit and/or implicit margin of safety for each pollutant. 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.

An implicit MOS is identified for the low pH impairment. Future monitoring reports will help reveal if water quality standards are being met. Additionally any new discharger locating in the watershed will have to meet the pH water quality standard of 6.5 to 9.0 SU at end of pipe.

Seasonal Variation and Critical Conditions

Submittal describes the method for accounting for seasonal variation and critical conditions in the TMDL(s).

Seasonal variation was considered, and critical conditions were identified. While it is acknowledged that the pH varies with temperature, the water quality standards for pH do not distinguish between seasons, the water quality standard of 6.5 to 9.0 SU applies year round.

Public Participation

Submittal describes public notice and public comment opportunity, and explains how the public comments were considered in the final TMDL(s).

This TMDL was placed on public notice from June 4 to July 4, 2004; three comments were received and addressed.

Monitoring Plan for TMDL(s) Under Phased Approach

The TMDL identifies the monitoring plan that describes the additional data to be collected to determine if the load reductions required by the TMDL lead to attainment of WQS, and a schedule for considering revisions to the TMDL(s) (where phased approach is used).

McKenzie Creek is included in MDNR's fiscal year 2005 quality assurance project plan (FY05 QAPP) and calls for monitoring three times a year in the upper McKenzie Creek at four sites. Parameters include pH, Alkalinity, Dissolved Oxygen, Sulfate, Specific Conductivity, and others. GS Roofing will also be monitoring pH at the same four locations.

Reasonable assurance

Reasonable assurance only applies when reduction in nonpoint source loading is required to meet the prescribed waste load allocations.

Should Glover Smelter resume operations, they would have to comply with restrictions of Emission of Sulfur Compounds. Monitoring of pH by GS Roofing will evaluate whether the quarry is contributing to acidity in McKenzie Creek. If monitoring indicates the quarry is contributing to the problem, phase II of this TMDL will dictate a revised pH limit for inclusion in the quarry's re-issued NPDES permit.